

ABSTRACT

Title of Thesis: PARENT- AND TEACHER-RATED SOCIAL SKILLS AND THEORY OF MIND IN KINDERGARTENERS

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This study investigated how kindergartners' use of Theory of Mind (ToM; understanding and inferring others' mental states to predict and explain behavior) relate to their Social Competence (SC), as rated by parents and teachers. This study aimed to determine whether social skills items could be classified as more or less conventional (knowledge of emotions and social conventions) or intentional (requires noticing and interpreting other's beliefs and intentions) based on their correlates with more or less structured performance measures of ToM, respectively. Results partially supported this distinction. Patterns suggested that parents and teachers judge children's social skills differently. This study also explored relations of language with SC and ToM. Language accounted for much of the variance in the more structured ToM task and teacher-rated social skills, but not the less structured ToM task or parent-rated social skills. Implications for SC conceptualization and scale construction and interpretation are discussed.

PARENT- AND TEACHER-RATED SOCIAL SKILLS AND THEORY OF MIND
IN KINDERGARTENERS

by

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Chapter 1: Introduction

Social competence (SC) is a broad construct, generally conceptualized as effectiveness in social interactions (Rose-Krasnor, 1997). Social competence is increasingly studied in education policy and research (e.g. Jones & Bouffard, 2012; Liew, 2012) as it relates to many important aspects of child functioning such as academic performance, quality of peer and teacher interactions, and even potential school drop-out (Raver and Knitzer, 2002). In fact, the impact of social competence reaches beyond school years: teacher-rated social competence of kindergarten students has been associated with key young adult outcomes including education, employment, substance abuse, criminal activity and mental health (Jones, Greenberg & Crowley, 2015). Accurately conceptualizing and measuring SC, as well as identifying factors that predict successful developmental paths in the social functioning, play an important role in preventing these negative outcomes and maladaptation.

Socially competent behavior is the outcome of various mental processes that enable the individual to act in socially effective ways, allowing the child to balance personal and shared social goals. SC is closely related to Theory of Mind (ToM), the ability to understand and infer other's mental states including beliefs, desires, emotions, and intentions in order to predict and explain behavior (e.g. Korucu et al., 2016; Fink, Begeer, Hunt, & Rosnay, 2014). ToM therefore allows children to identify and interpret emotion laden social cues and then predict how someone might react in a specific situation, which lends itself to effective social interactions. This concept of ToM has been related to SC across several studies in terms of peer preference (e.g. Fink et al., 2014; Slaughter, Imuta, Peterson, & Henry, 2015) and teacher ratings of children's social skills

(e.g. Cassidy, Werner, Rourke, Zubernis, & Balaraman, 2003; Korucu et al., 2015; Devine, White, Ensor, & Hughes, 2016).

Measurement and Response Expectations

SC is most frequently measured with rating scales where items describe prosocial behaviors, or social skills. ToM is typically measured with vignette-based performance tasks where children are explicitly provided with information about two or more characters' conflicting beliefs about a situation. The child is then asked to predict what each character might think or do, based on their beliefs about the situation. For example, a child is told that a character in a story, Sally, put her toy in location A. While Sally is away, someone else comes in and moves the toy to location B. The child is then asked where Sally would think her toy is when she comes back into the room, and where she would look for it first (Wimmer & Perner, 1983). However, in many real life situations, the child is not provided with such explicit cues, but rather has to use ToM understanding to figure out what another person thinks, in order to infer why they are acting a certain way (e.g., Sally isn't talking to me because she is nervous about the first day of school, even though I am really excited about the first day of school). This type of mental reasoning forms the foundation of SC, as children use this information to act in goal directed, socially competent ways (Rose-Krasnor, 1997).

Theoretically, given the relations between SC and ToM, performance on social skills rating scales should match performance on tasks of ToM, but these expected relationships are often weak or nonexistent in the literature (Weimer & Guajardo, 2005; Lalonde & Chandler, 1995; Cassidy et al., 2003). In response to this, some have made the distinction between two types of social skills, based on the finding that not all types of

prosocial behaviors relate to False Belief (FB) understanding, an essential component of ToM. FB understanding involves the realization that beliefs involve representations of reality, and therefore can be mistaken (i.e., false; Hughes et al., 2005). Lalonde and Chandler (1995) found that 3-year-olds' performance on FB tasks correlated with teacher ratings of socio-emotional maturity, but only if items included *intentional* prosocial behaviors such as cooperative and make-believe play. There were no correlations between FB understanding and prosocial behavior items than can be described as rule following, such as taking turns and saying: "please and thank you." Based on these findings, the authors determined that we use two distinct types of social skills, depending on the demands of the social context, and that these types of skills relate differently to mental state understanding. The first type, *conventional* SC, requires knowledge of rules concerning socially appropriate behavior (e.g., raising one's hand before speaking in class). Situations in which there are clear rules regarding expected behavior may be described as ones with clear response expectations (e.g. knowing that the correct way to answer a question in class is to raise your hand first). In these familiar and structured situations where response expectations are clear, conventional SC will suffice. Other, less structured situations are more ambiguous because the appropriate response is not guided by a rule for what is "correct," but requires the individual to use ToM to interpret relevant social cues and act on their personal goals or intentions (e.g., comforting a peer). This process of observing social cues, interpreting them and acting to pursue a social goal refers to *intentional* SC.

To summarize, social situations vary in the clarity of their response expectations and therefore require the use of different types of social skills in order to respond

effectively to the situation. More complex *intentional* skills require the use of ToM, whereas the use of *conventional* skills do not. Based on this reasoning, it makes sense that different types of social skill items on rating scales may be classified as *intentional* or *conventional*, depending on the response expectations of the situation in which the skill is enacted. Furthermore, the clarity of response expectations about the same social skills may differ by setting, depending on the situation demands. For instance, the situation demands of entering a group to join an activity may be much clearer at home, where the child is already accepted as a family member. However, at school, the child has to notice and interpret many ambiguous cues to identify a group that is open to a newcomer and has to say or do the appropriate things at the right time in order to be accepted into the group to join the activity. Although this distinction makes conceptual sense, it has received little attention in research, and ratings scales do not distinguish between items and contexts that would require intentional or conventional social skills.

Similarly, just as clarity of response expectations is not considered in items measuring SC, it is rarely considered that tasks measuring ToM may also vary in the clarity of their response expectations. Some tasks have clear rules and response expectations (i.e. responses that are considered correct or incorrect), whereas others do not provide information about what is expected or even important to pay attention to when responding. These tasks can be classified as more or less structured, respectively. More structured tasks of ToM (predominantly used in research and assessment) typically provide a vignette-based situation where the child is explicitly told what each character believes or thinks. The child is then asked to predict what each character will think or do, given the details of the situation. In fact, prompts may even be more specific, such as

“Where does Sally think Johnny put the cookies?” In contrast, a less structured task of ToM would not provide such explicit directions and response expectations, and a variety of response may be considered correct or appropriate, given the context. For example, when a child is asked to tell a story about a tension laden picture, he or she has to determine which details to focus on, make inferences about what the characters are thinking and feeling, and synthesize the information to tell a coherent story with an ending that hopefully resolves the tension. In this case, just like in most real-life situations, the child has to “read” and respond to cues about thoughts and feelings that are not explicitly stated.

Given the clear response expectations of more structured tasks, these widely used ToM measures may not be able to measure the construct in a way that can capture the type of social understanding involved in *intentional* social skills (where response expectations are unclear). However, these more structured measures of ToM may be related to conventional social skills, as both only require the necessary knowledge of social conventions needed in situations where response expectations are clear. Annotti and Teglassi (2017) used this conceptualization of clear and ambiguous response expectations to match measures of social skills ratings with performance on executive functioning tasks. They found better model data fit indexes when predicting teacher-rated SC from kindergartener’s performance on tasks of executive functions when both measures were matched on their clarity of response expectations, compared to a mismatched model where the performance tasks and SC ratings differed in their clarity of response expectations.

The Target Age Group

Research indicates that children typically develop a ToM understanding by age 4-5 years, but that there is variability in their ability to link their beliefs about others' thoughts to emotional consequences (Harris, De Rosnay, & Pons, 2005). In a story-based study, most 4-5 year-olds could tell that Red Riding Hood didn't know it was a wolf at her door (false belief understanding), but some did not yet connect that she was therefore not scared. Most 6-year-olds were able to make this connection between belief and emotion (Harris et al., 2005). Similarly, children around 5 years of age develop the ability to link others' emotions to internal causes (thoughts and desires), whereas 3-4-year-olds are mostly limited to identifying emotions elicited by external causes (stereotypic situations; Wellman, Cross, & Watson, 2001). In addition, researchers measured the developmental trajectory of preschoolers' performance on tasks of emotion recognition (happiness, sadness, anger, and fear) and false-belief understanding (measured with an unexpected-location and an unexpected-contents task) at age 3 - 4 years old, and at 3 subsequent 6-month intervals (Wang, Liu, Su, & District, 2014). Results showed that children's performance on both tasks increased significantly at each time point in the first year and a half, but no significant increases were found in the last 6 months (above 6 years of age; Wang et al., 2014). Therefore, the target age group of 5-6-year-olds will provide a population with a variation of ToM ability.

Research Questions

This study aimed to explore two questions: The first being what, if any, relations exist between different types of social skills items on a widely used questionnaire and ToM performance tasks? It was expected that these relations would be a function of the

clarity of response expectations required from each social skills item or ToM performance measure. A potential caveat was that these relations might be context specific. The same items on a social skills scale may vary in the clarity of response expectations, given the different situational demands at home and at school. Therefore, this research explored these relations separately for parent and teacher informants. The second question addressed the role of language, which has been shown to be intricately linked with children's social competence and with ToM (e.g. Cassidy et al., 2003). This study explored the relations of language with SC and with various performance measures of ToM and examined patterns of relations between SC and ToM with and without controls for vocabulary. Ultimately, this study aimed to determine whether it is useful to classify social skills items and scales on the basis of their correlates with different types of ToM measures. This conclusion was said to be supported if different types of social skills items differed in their associations with or predictions of adjustment criteria, depending on the context demands.

Chapter 2: Overview of the Literature

Social Competence

Social Competence (SC) is a term most frequently used to capture social and emotional functioning and is broadly referred to as effectiveness in interactions. SC is a complex and multidimensional construct that has been conceptualized in numerous ways (e.g. Cavell, 1990; Rose-Krasnor, 1997; Denham, 1994; Dirks, Treat, & Weersing, 2007). In this study, SC is understood through Rose-Krasnor's (1997) three-level Social Competence Prism: The highest level comprises a theoretical conceptualization of SC as effective social interactions resulting from organized behaviors that meet the individual's short and long-term needs. The Index level represents specific age and context appropriate outcomes that can be judged as socially competent or not, such as quality of friendships. Outcomes are judged as successful when a balance is maintained between the goals of the individual and those around them. The third level comprises skills that form the foundation of social competence. This level includes specific skills as well as goals and values that provide motivation for social behavior. Whereas SC outcomes can be measured more globally at the Index level by judging the success of specific outcomes, interventions (and therefore also assessment) should be targeted at the Skills level. Interventions should be based on training skills and motivational characteristics linked to the selected competence indices (Rose-Krasnor, 1997). Rose-Krasnor's social outcomes described at the Index Level also relate to developmental task theory, the well-established idea that there are salient developmental tasks by which social adaptation can be judged (Masten et al., 1995; Sroufe, 1979). These developmental tasks represent the benchmarks of social adaptation within each

developmental period and are specific to sociocultural expectations. For example, young children's social tasks across contexts include managing emotional arousal within interaction while coordinating social play (Gottman & Mettetal, 1986; Denham et al., 2011).

Social competence and social skills. Social skills are specific behaviors exhibited in specific situations that lead to judgments by others that these behaviors were competent or incompetent in accomplishing specific social tasks (Gresham & Elliott, 2008). Drawing on developmental task theory (Masten et al., 1995; Sroufe, 1979), social skills are enacted to successfully complete social tasks such as peer group entry or conflict resolution. When put in the framework of Rose-Krasnor's (1997) SC prism, several of these social tasks would contribute to social success at the Index level. For example, a child would need to navigate social tasks such as peer group entry, initiating and sustaining a conversation, and playing cooperatively with peers, in order to be judged as successful on the age appropriate index of "friendship success."

Social skills measurement: rating scales. Behavior rating scales are among the most frequently used measures of social skills in both school and clinic settings (Gresham, Elliott, Vance, & Cook., 2011). Social skills rating scales are indirect measures of behavior that require the rater to retrospectively rate the occurrence of behavior (Gresham & Lambros, 1998). These rating scales are advantageous as they provide information that can be quantified and therefore subjected to reliability and validity analyses. They also allow for a broad range assessment of behavior from multiple raters (e.g. parents, teachers, and students) within a short period of time. Furthermore, they provide normative data that can serve as a standard for judging the severity of the

behavior against representative samples of same age peers (Gresham & Elliott, 2008; McConaughy & Ritter, 2002). Despite these advantages of behavior rating scales, a long-standing problem and topic of research is the robust finding of low to moderate agreement (Pearson r of .20 or less) between different ratings of social, emotional, and behavioral problems (Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2004; Renk & Phares, 2004).

Researchers observe informant discrepancies even when informants complete parallel or identical measures that are reliable and extensively validated (De Los Reyes, 2011). The creators of the SSiS, the instrument used in this study, found a parent-teacher correlation of .30 (Gresham, Elliott, Cook, Vance & Kettler, 2010). When raters shared similar environments, the correlations increased dramatically: Teacher-teacher and parent-parent correlations for Social Skills were .68 and .62 respectively. These findings are consistent with the conclusions of Achenbach and colleagues (1987) concerning the situational specificity of behavior. In other words, these low correlations do not necessarily indicate that one rater is wrong or right, but that there is something about the context and situation demands that elicit more similar ratings among those who observe the child within the same setting. Social skills are therefore highly context-specific, and the skills necessary to function successfully at home differ from those required at school. This notion has been discussed extensively in the social skills literature (see DuPaul & Eckert, 1994; Elliott, Gresham, Frank, & Biddow, 2008; Gresham, 1998). It is now commonly accepted that, because of differing perspectives, informant ratings are not interchangeable and that each provides potentially valuable assessment data (Hunsley & Mash 2007). This study expanded this understanding to not only include different

perspectives of informants, but differing response expectations set by the context in which the social skills are being evaluated.

Conventional and intentional social skills. In this study, SC was conceptualized and examined as a multidimensional construct that includes observed social skills, as measured by a social skills rating scale, as well as the underlying mental processes that allow for socially competent behavior. Numerous processes are theoretically linked with SC, such as self-control, executive functions, motivation, and self-regulation (Blair & Razza, 2007; Deci & Ryan, 2012; Shields, Cicchetti, & Ryan, 1994). This study focused on the understanding of thoughts and emotions, which is also known as Theory of Mind (ToM). ToM allows the child to understand that others may have different beliefs than her own, and that what persons believe drives how they feel and act in social situations (Hughes et al., 2005). Therefore, ToM allows individuals to interpret social cues and react based on their understanding of their own and other's beliefs, desires, emotions and intentions. These competencies (ToM and other mental processes) fall under the Skills Level of-Rose Krasnor's SC Prism, as they are closely related to the development and use of social skills.

ToM allows individuals to think flexibly and adjust their behavior according to the demands of the specific social context. Social situations vary about expectations for what constitutes appropriate behaviors. Whereas some provide explicit standards or rules, others permit many potential responses depending on individualistic interpretation. Situations with less clear response expectations require a wider range of capabilities to act in a socially competent manner than do others. Lalonde and Chandler (1995) argue that we use two distinct types of social skills, depending on the demands of the situation

we face. The authors categorized these skills based on the mental processes that underlie the use of certain skills as opposed to others: in their study exploring the relations between ToM tasks and social competence, the authors found that 3-year-olds' performance on false belief tasks correlated with teacher ratings of socio-emotional maturity that included certain prosocial behaviors such as cooperative and make-believe play. These behaviors or skills were labeled as *intentional*, as they require the individual to interpret relevant social cues and act on their personal goals or intentions. On the other hand, they found no significant correlation between false belief and other social skills that merely reflect learned social rules, such as taking turns and saying "please" and "thank you." These rote behaviors that do not require intention and an understanding of other's mental states were labeled as *conventional* skills. In Lalonde and Chander's (1995) sample of 3-year-olds, those who were able to accomplish the FB tasks were likely more mature and able to act intentionally. Compared to 5-6-year-olds, is necessary to provide such structure when measuring ToM in 3-year-olds and demands for age appropriate social skills also differ for these age groups.

Therefore, *conventional* SC requires knowledge of situational conventions (e.g., raising hand). When response expectations are clear, as is often the case with routine/familiar situations, *conventional* SC will suffice. However, in many social situations there is a degree of uncertainty where effective interaction consists of organized behaviors that are adapted according to context in order to meet or maintain both personal and peer goals. In more ambiguous situations where a simple social rule does not suffice, individuals need to interpret relevant social cues and act on their

personal goals or intentions (e.g., comforting a peer). This process of observing social cues, interpreting them and acting to obtain a social goal refers to *intentional* SC.

Currently, social skills rating scales do not make this distinction between *conventional* and *intentional* SC. While this area of interest is vastly understudied, a few researchers have addressed this distinction (see Lalonde & Chandler, 1995; Saltzman-Benaiah & Lalonde, 2007). Specifically, *conventional* items refer to social behaviors that only require knowledge of what is expected in the situation and on the self-control to act accordingly, whereas *intentional* items refer to social behaviors that require understandings of mental states and social causality. Annotti & Teglasi (2017) add to this distinction by stressing the influence of clear or unclear response expectations on both questionnaire items of social competence and performance tasks of ToM. For example, an item such as “says thank you” requires the rater to evaluate the child’s behavior under relatively structured conditions where there is a clear social norm to apply (e.g. when someone hands you something, you say thank you). On the other hand, when raters respond to a question like (“comforts peers when they are sad”), they are evaluating the child within a typical context, where he or she needs to evaluate and synthesize social and emotional cues in order to act in an *intentional* way. Annotti and Teglasi (2017) presented criteria for specifying items as *conventional* or *intentional* on the teacher-rated Social Skills scale of the Social Skills Improvement System (SSiS, Gresham & Elliott, 2008; used in the current study). Specifically, *intentional* items were described as behaviors where “given equivocal response expectations, well-learned social scripts do not suffice to guide behavior without also formulating personal intentions informed by understandings of mental state and social causality” (Annotti & Teglasi, 2017, p. 255).

Conversely, *conventional* items were described as behaviors where “clear and specific response expectations enable behavior to be directed by knowledge of situational conventions and self-control without having to understand mental states or social causality” (Annotti & Teglassi, 2017, p. 255). With adequate agreement across three raters, they classified 25 Items as intentional, and 26 as conventional. However, such classification is imprecise as it relied on general judgements about items, and the clarity of expectations may vary within actual classrooms and across school and home settings.

Theory of Mind

The term ToM is most often used to describe one’s ability to understand and infer other’s mental states including beliefs, desires, thoughts and intentions to predict and explain behavior (e.g. Korucu et al., 2016; Fink, et al., 2014). A key component of a ToM involves the realization that beliefs are representations of reality, and therefore can be mistaken (i.e., false; Hughes et al., 2005). This False Belief (FB) understanding emerges around age 4 (Saltzman-Benaiah & Lalonde, 2007; Wellman et al., 2001; Ornaghi, Brockmeier, & Grazzani, 2014). Most three-year-olds appear to perceive desires and beliefs as objective features of the world: they think that their own ideas regarding desires and beliefs about the true state of affairs apply to everyone. Around the age of five, children begin to appreciate the fact that people have different desires and beliefs, and at this age, they are able to predict others’ emotions accordingly, even if they find those desires undesirable (Rieffe, Meerum Terwogt, Koops, Stegge & Oomen, 2001) or find out that others’ beliefs differ from their own knowledge about the situation (i.e. FB understanding; Hadwin & Perner, 1991; Harris, Johnson, Hutton, Andrews & Cooke, 1989; Rieffe, Meerum Terwogt, Koops & Hageenaar, 2000). Children who are able to

solve false belief-tasks are aware of the fact that others may hold different perspectives from their own, and that people tend to act on the basis of those beliefs, whether objectively true or not. However, there is much variation in the age at which these competencies develop and these differences have been attributed to individual factors including language ability and parental education and occupation (Cutting & Dunn, 1999).

Whereas most researchers focus solely on the cognitive aspects of ToM, such as FB understanding (e.g. Cassidy, et al., 2003), others argue that ToM includes an understanding that emotions are influenced by beliefs (Harris, De Rosnay, & Pons, 2005; Hughes & Dunn (1998). For instance, Weimer & Gasquoine (2016) propose that belief reasoning and emotion understanding are unique aspects of ToM understanding. Lagattuta and Wellman (2002) use the term psychological understanding to describe an individuals' ability to identify and label distinct facial and vocal affective expressions, to predict probable emotional reactions to events and mental states, and to explain and elaborate on the causes and consequences of different feelings. Others agree that the understanding of mind and emotion are inseparable but argue that belief reasoning develops first: Harris and colleagues (2005) found that whereas 3-year-old children do not typically understand FB, most understand it by age 4 to 5 years, but they do not all make the links between belief and emotion. In their story-based study, 4-5 year olds could tell that Red Riding Hood didn't know it was a wolf at her door, but they did not yet connect that she was therefore not scared. By age 6, most children fully grasped the dynamic. In another example, when study participants were told that a story character was feeling differently than would be expected (e.g. feeling angry after hearing a loud

noise while in bed at night), most children aged 6 and older were able to give an explanation for the unexpected feeling that related to the character's desires or beliefs (e.g. the character was angry because she knew it was her brother being noisy and she wanted to sleep). Younger children (age 4) more often attributed the unexpected emotion to the situation, rather than the character's beliefs and desires (Ornaghi et al., 2014). Therefore, in the study by Ornaghi and colleagues (2014), older children were able to use ToM understanding in order to reason about the ambiguous social cues in the story.

Emotion knowledge. The emotion aspect of social understanding is often separated from ToM and studied with affect recognition or situation-based emotion knowledge tasks (Izard, Schultz, & Fine, 2001; Rieffe, Terwogt, & Cowan, 2005). Emotion Recognition tasks are more structured tasks that require children to label emotions based on nonverbal cues provided out of context. For example, children label emotions of pictured facial expressions (e.g., Izard, 1971; Emotion Identification subtest of the ECT, Gustafson, 2009) or match emotions among pictured facial expressions of different children or characters (e.g., Emotion Recognition subtest of the NEPSY II; Korkman, Kirk, & Kemp, 2007). Situation-based emotion knowledge tasks use story vignettes in order to prompt children to identify external causes of emotions within social situations (Rieffe et al., 2005; Schultz, Trentacosta, Izard, Leaf, & Mostow, 2004). For example, a child is read a vignette about a character losing a favorite toy, and then asked to verbally label or point to a picture of the appropriate emotion from a short list of possible answers (for example, see Garner & Estep, 2001 and Gustafson, 2009). These tasks are highly structured and do not involve ToM understanding, only knowledge of emotions as they pertain to stereotypic situations.

Theory of mind measurement and response expectations. Performance tasks of ToM can be classified as comparatively more or less structured, based on the clarity of response expectations of the give task. More structured tasks provide explicit information about the problem at hand and the type of response that is expected. There are certain implied criteria about correct or incorrect responses. In contrast, less structured tasks are more equivocal as they do not provide explicit clues about the problem to be solved. On these tasks, the participant has to identify the problem herself and decide how to respond. As the child acts on her own intention, a range of responses may be judged as more or less appropriate, given the details of the task and problem identified by the child. The following section provides an overview of the different types of more and less structured ToM tasks.

More structured tasks of theory of mind. The most popular measures of ToM include standardized vignette-based FB tasks where a child is told a short story and asked to make a conclusion or predication based on the beliefs of the characters in the stories. For example, in a change of location task, the child participant is told that a character in a story, let us call her Sally, put her toy in location A. While Sally is away, someone else comes in and moves the toy to location B. The child participant is then asked where Sally would think her toy is when she comes back into the room, and where she would look for it first (Wimmer & Perner, 1983). Another popular FB task is an unexpected contents task, where a child is shown a container with a descriptive label (e.g. a cookie jar) and is asked what she thinks is inside the box (cookies). The experimenter then opens the task and shows that an unexpected item is inside (e.g. marbles). The container is then closed and the child is asked what her friend would think was in the container if she entered the

room now (e.g. Perner, Leekam, & Wimmer, 1987). Most of these false belief tasks attempt to tap into “meta-representational reasoning,” the ability to contrast the reality of an object or event with how the object appears to be or how it appears to another person (Lucariello, Durand, & Yarnell, 2007). These tasks are more structured because there is a clear correct answer and the experimenter explicitly tells the child what the problem is (e.g. what each character knows and does) and given precise guidelines about the type of answer to provide (e.g. “what does Sally think is inside the box.”)

Other, non-FB tasks of ToM have been developed to reveal children’s understanding of other’s mental states. These first-order ToM tasks assess the child’s ability to distinguish between concepts such as (1) appearance and reality, and mental states and physical phenomena (Baron-Cohen, 1989). Examples of each of these can be found in ToM subtest of the widely used NEPSY-II (Korkman et al., 2007): An example of the first distinction is a pictured teakettle which resembles an apple. Children are asked what the object is (a teakettle), testing their ability to distinguish between appearance and reality. For the second distinction, the participant must differentiate between different mental states and their connection to a physical phenomenon by listening to a story about three girls thinking about, dreaming about, or living near, a dolphin, and deciding which one could hug a dolphin in real life. Other ToM tasks involve tasks of abstraction, where the child must go beyond the literal (such as literal statement or pictured behavior) and apply contextual clues to decipher the person’s meaning or thoughts. For example, the child is shown a picture of a man that looks like he is thinking. The child is then asked, “what is the man doing?”. Here, the child needs to go beyond identifying the physical behavior (a man sitting with his hand touching his chin and a puzzled expression) to

abstract or infer that the man is thinking. These tasks are also more structured as the child is told exactly what to focus on (e.g. “look at this picture”) and what type of response is expected (e.g. “what is this man doing?”).

Limitations of more structured measures of theory of mind. A key limitation of the vignette format of more structured ToM tasks is that children are explicitly given clues about the characters’ desires or beliefs. Moreover, the information provided is very concrete, for example, a change in the actual situation is shown to the child, therefore the distinction between reality and appearance is made explicit. However, children may not infer cognitive and emotional mental states spontaneously without such explicit cues. Therefore, these demands may transfer only to real-world contexts where the child is asked to focus on what another person believes or desires. However, performance on these tasks may not transfer to real-world contexts where predicting emotions involves independently reading situational cues and inferring a person’s mental state (Rieffe et al., 2005).

These limitations to more structured measures of ToM suggest that relatively less structured measures, which tap into everyday demonstrations of ability, may be better able measure ToM as it relates to ambiguous or unstructured social situations. In fact, a recent study indicated that preschoolers’ temperament had indirect effects on teacher-rated SC through its influence on emotion-situation reasoning (children's causal reasoning about the connection between emotions and situations), but not for emotion situation knowledge (Verron & Teglassi, 2018). A key difference in these measures is that the emotion-situation knowledge task is more structured (children attribute one of five basic emotions to a short stereotypic vignette), whereas the emotion-situation reasoning

task involved a prompt where children provided a reason for attributing specific emotions to characters in the vignettes, making the task less structured as a variety of response options would be appropriate.

Less structured measure of theory of mind. Unstructured measures of ToM, like certain storytelling tasks, mirror ambiguous social situations where the child has to notice and understand the emotionally salient cues of the situation in order to predict the characters' thoughts and feelings, and how the situation or problem may play out. One example of such a storytelling task, The TAT (Morgan & Murray, 1935), involves a set of pictures displaying tension within or between characters. Children are asked to tell a complete story, including what the characters are thinking and feeling. These story components elicit social information processing mechanisms involved in social problem solving (Teglasi, 2010). Storytelling can be considered as less structured measure of ToM where the narrator has to infer the characters' thoughts and emotions, based on a combination of how the characters look in the picture (they have different emotions) and the scene or context. Participants' stories told about TAT stimuli can be coded for aspects of ToM such as relating described behaviors to inner states attributed to story characters. The coding categories of "level of abstraction," and "perceptual integration" were chosen for this study given their connection to ToM and reliability of use in previous studies. Level of abstraction involves how well a child can "interpret" the social scene beyond what is pictured. For example, a child with low abstraction might describe the picture very literally (Examiner prompts are boldfaced):

"A boy.. (long pause). Tell me what you think might be happening in this picture. He's wondering and he's pulling his ear. What happened before? I don't

*know. **What is he thinking?** Thinking of ... [points to violin] what is this? **How is he feeling?** Weird. **Then what happened?** I don't know. **How does it all turn out in the end?** He... [long pause] **Want to go to the next one?**”*

On the other hand, children who score high on this measure tell stories with intentionality where elements of the story go beyond what is pictured, and is tied to the character's thoughts, desires, and long-term plans:

*“He thinks playing the violin is easy when really it's not. **What happened before?** He just started playing violin. **Then what happened?** He started to think violin got so easy but really he has to learn more. **How is he feeling?** Disappointed. (long pause) **How does it all turn out in the end?** Good.”*

Perceptual integration, similarly, focuses on the integration of the character's inner and outer worlds, but goes further to include complexities such as understanding and applying realistic causal relations to the characters' thoughts, feelings, actions, and the outcome of the story (Teglasi, 2010). Thus, perceptual integration is tied to the theoretical functions of ToM as it allows the child to anticipate other's responses and thereby judge the appropriateness of his/her own responses.

Such relatively less structured approaches to measuring ToM have been understudied with children. However, Annotti and Teglasi (2017) recently used storytelling about pictures (from the Thematic Apperception Test, TAT; Morgan & Murray, 1935), depicting tensions to be identified and resolved as a measure of young children's executive functions in relation to different types of social competence. The tension in the pictures indicate that the characters may have differing desires or intentions. Results from a previous study using the TAT (with the same scoring system as

used in this study) indicated that children rated as high in empathy (a component of SC) by their teachers received higher scores on the storytelling measure than their low-empathy peers (Locraft & Teglassi, 1997). Storytelling has also been used in interventions: Teglassi and Rothman (2001) used narratives to enhance children's social competence by guiding them to synthesize the story details in order to gain insight about the characters, and to apply those understandings to self and others.

Relations between Social Competence, Theory of Mind, and Types of Measures

ToM is theoretically regarded as a prerequisite component of social competence (Imuta, Henry, Slaughter, Selcuk, & Ruman, 2016; Denham et al., 2003; Ornaghi et al., 2014). The ability to obtain information about beliefs, desires and intentions from the social environment plays a central role in navigating social interactions (e.g., Buck, 1975; White & Lobato, 1982). However, the ability to interpret this information and connect it to others' feelings and actions may be the essential step for effective social interactions in ambiguous situations. The relations between SC and performance tasks of ToM are inconsistent (Cassidy et al., 2003; Lalonde & Chandler, 1995; Fink et al., 2014), and this may be in part due to the differences in performance demands of structured and unstructured tasks. For example, one study indicated that neither parent nor teacher ratings of 4-year-olds' SC were related to structured FB tasks when controlling for language ability (Weimer and Guajardo, 2005). Yet, teachers' reports about one aspect of SC, children's expressiveness (measuring behaviors like sympathy, confidence, understanding of feelings, and enjoyment of talking), was related to children's abilities to identify causes of their own and their friends' emotions, beyond the influence of language. In this instance, children's SC was related to the less structured measure of

ToM where children, after identifying emotions from pictures, explained the causal connections between circumstances and those emotions.

Taken together, results suggest that one way to navigate the inconsistencies in the literature in the relations between ToM, and SC is to make a distinction between types of SC and types of ToM measures. Less structured ToM measures may not be a useful predictor of social skills that rely on knowledge of social scripts (conventional social competence; e.g., being polite, taking turns and following structured specific rules) but may be a good predictor of social skill that warrant more nuanced social interactions (i.e. peer entry, cooperative play). More structured ToM measures may relate to social skills that are governed by social conventions. However, patterns of relations will likely also depend on the setting in which the social skills are observed and reported by informants. As mentioned before, Lalonde and Chandler (1995) found that certain types of SC involving intentional, goal directed behavior related with children's performance on FB tasks, whereas types of SC involving rule following and politeness (knowledge of social conventions) did not. However, their study examined very young children (3 year olds) who were just developing ToM, therefore more structured measures may have been more appropriate to measure individual differences. With 5 or 6 year olds, the more structured ToM task may not be the best measure to link with social effectiveness. ToM as measured with more structured measures is binary, meaning the child either has this capacity or not (answers are correct or incorrect). Yet there are qualities such as being able to use ToM without being prompted (by a more structured task), that may pertain to social effectiveness in the age range that were under consideration in this study.

Informants. The study by Lalonde and Chandler (1995) only examined social behavior in one context (school), whereas this study examined it across both school and home contexts. In fact, the vast majority of studies examining children's SC and ToM only use teacher raters. This provides an overview of children's behavior that is limited to the school setting (e.g. Cassidy et al., 2003; Lalonde & Chandler, 1995; Korucu et al., 2016; Izard et al., 2001). Only one study was identified that included both parent and teacher informants when examining relations between typically developing children's SC and ToM as measured by FB tasks (Weimer and Guarjardo, 2005). In this study of 60 3-5-year-olds, only teacher (and not parent) ratings of children's SC significantly correlated with standard FB task scores. Given the lack of multi-informant studies and the discrepancies in findings when SC is measured by different raters, the current study contributed to this area of research by exploring the relations between ToM and both parent *and* teacher ratings of SC.

Language

Language is an important correlate of ToM and SC that has been considered in studies assessing these constructs. For example, the role of language in ToM ability is well established in the literature: A meta-analysis yielded a moderate to large effect size for the influence of language on FB understanding, which remained significant even after controlling for age (Milligan, Astington, & Dack, 2007). In addition, there is a strong evidence base for relations between young children's receptive vocabulary and teacher ratings of SC (e.g. Longoria, Page, Hubbs-Tait, & Kennison, 2009; Gallagher, 1993; Connell & Prince, 2002). However, there are some exceptions. For example, parent ratings of SC, but not teacher ratings, significantly correlated with children's receptive

language in a large sample (N= 356) of Head Start preschoolers (Bierman et al., 2008). Results are also inconsistent when it comes to relations between young children's language skills and *parent* ratings of SC, as some studies indicate significant relations between the variables (e.g. Bierman et al., 2008;) and others non-significant relations (e.g. Lengua, Honorado, & Bush, 2007).

The effect of language on ToM and SC is also inconsistent when studying the constructs together. For example, Cassidy and colleagues (2003) examined (among other things) the relations between children's social skills (as measured by the SSiS teacher rating scale), affective perspective taking, and false belief (as measured with performance tasks). While they found significant correlations between teacher-rated social skills with affective perspective taking and false belief at .32 and .44, respectively, the results were confounded by a language variable that accounted for 17% of the variance in social skills ratings (language was not controlled for). In contrast, Watson, Nixon, Wilson, and Capage (1999) found 3- to 6-year-olds' false-belief understanding to be related to teachers' ratings of children's overall social competence with peers, even after controlling for the effects of age, language comprehension ability, and talkativeness. Given these mixed findings, it is important to continue studying the relation between language ability and different types and measures of SC and ToM. Another caveat that is understudied is that language may not be equally associated with SC in different settings (home or school) and what that might mean for controlling or not controlling its effects. For example, in the one identified study that examined both parent and teacher ratings of SC in relation to children's ToM, a language control eliminated all relations between parent-rated SC and FB task performance, yet the relations between teacher-rated SC and

some FB tasks remained significant (Weimer & Guajardo, 2005). The current study contributed to this question by examining the influence of language on the relations between relatively more and less structured measures of ToM, as well as SC items and scales rated by two different types of informants (parents and teachers).

Summary of Purpose

The method of measurement is an important consideration when examining associations among constructs. ToM refers to underlying mental processes involved in socially competent behavior, or social skills. Whereas ToM is measured with task performance, the most common approach to measuring SC in young children is with questionnaires completed by parents and teachers. Inconsistencies in the literature of relations between SC and ToM warrant consideration of multiple ToM measures in relation to SC. In fact, even when the same construct is measured with different methods, convergence is low. In other words, informants do not agree on rating scales and performance task scores of the same construct do not necessarily correspond (De Los Reyes, 2011). One conceptualization that may explain these patterns is the variance in structure and response expectations, both in measurement and real-life settings. In fact, SC can refer to conventional and intentional behaviors. More structured performance tasks of ToM and conventional SC suffice in more structured situations with clear response expectations where basic knowledge of emotions and social conventions are required. On the other hand, intentional SC involves noticing and making sense of others' beliefs and intentions and acting intentionally in order to navigate social challenges. Therefore, relatively less structured performance tasks of ToM may be needed to capture this latter type of social understanding. An important caveat is that social skills, as

described on rating scales, may be conventional in one context, yet intentional in another. For example, the situation demands of a social activity may be more or less clear at home or at school, depending on the nature of the existing relationships and the level of structure in the activity.

These patterns of relations between SC, ToM, and response expectations beg the question: Might items on SC questionnaires be conceptualized as intentional or conventional and how might this be accomplished? There may be certain criteria such as those suggested in a study by Annotti and Teglasi (2017): Their study showed that two measures of social behavior, one with the predominance of items judged conventional and the other intentional, showed different relations with performance tasks of executive functions in line with differences in the structure of the performance tasks. The social skills scale labeled as conventional aligned with more structured performance measures of executive functions, and the intentional labeled social skills scale aligned more with less structured tasks of executive functions. Moreover, La Londe & Chandler (1995) suggested that items on a questionnaire measure of SC may be classified as intentional and conventional based on their correlations with performance measures of ToM. Neither of these studies have systematically examined how specific social skills items relate to different underlying mental processes, such as different types of ToM measures. Furthermore, both of these studies only took teacher ratings, and not parent ratings, of children's social skills into account.

Therefore, it remained unclear as to whether the same item on a SC rating scale (e.g. "takes turns") may be seen as more conventional in a more structured setting (e.g. playing a game with explicit rules) and more intentional in a less structured setting (e.g.,

at the dinner table). As noted by Annotti and Tegalsi (2017), conventional and intentional SC, as well as high and low structure performance tasks or contexts, may not be binary concepts but may vary along continua that may characterize different contexts and performance tasks. Hence, in this study, both parent and teacher informants, and variation in structure of performance tasks of ToM were examined. This study involved the examining of multiple correlations and some of the associations were likely chance findings. Therefore, the emphasis was placed on patterns of relations of certain SC items with various ToM tasks that may have been distinct for each informant.

This study relied on the idea that clarity of response expectations provides an avenue to explore the nature of the relations between different types of items (relatively more conventional and more intentional) on social skills rating scales and different types of ToM measures (relatively more and less structured). Exploring the associations between items on a popular measure of social skills and various measures of ToM was intended to reveal patterns by which items on a popular scale to measure social skill may be differentiated, paving the way for subsequent research to refine measures of social skills. However, as it was expected that the same items may call on conventional social skills in one context and intentional social skills in another, the relations were examined separately for parent- and teacher-rated social skills.

Research Questions

This research poses two questions:

1. What patterns of relations can be discerned between social skills items and subscales on a widely-used questionnaire and ToM performance tasks?

- a. Can items be classified based on relations with more structured and less structured measures of ToM? Is there some underlying conceptual similarity among social skills items (conventional or intentional) that are related to an external criterion (structured or unstructured tasks of ToM)?
 - b. Can items be similarly classified for parent and teacher informants?
Given the well-documented phenomenon of low informant agreement between parents and teachers about children's SCs, as well as the different social demands of the home and school contexts, ToM correlates of specific social skills items likely vary with informants.
2. Does children's language ability influence the relations between social skills and ToM measures? This question was addressed separately for teacher- and parent-rated social skills. Since language has been shown to be intricately linked with children's social competence and with ToM (primarily in studies with teacher informants), many studies use vocabulary to control for this variable. The impact of such controls on relations between SC and ToM has not been systematically studied, particularly with different informants. This study explored and described parallel relations of vocabulary with parent and teacher reported SC and with various performance measures of ToM and examined patterns of relations between SC and ToM with and without controls for vocabulary.

Chapter 3: Research Methods and Research Designs

Participants

This study is part of a larger research project conducted by Dr. Hedwig Teglassi and a team of graduate student researchers. The current study uses a subset of available archival data which includes performance measures of ToM and parent and teacher ratings of social skills. Participants with complete data for both ToM measures and at least one social skills rater were included in this study. Ninety-seven of the potential 112 members in the study met these criteria. The sample consisted of 97 kindergarten students aged 5 to 7 years ($M = 69.18$ months; range = 60 – 83 months) and their parents ($N = 80$ and teachers: $N = 25$). Participants were recruited from six DC metro area schools, one school from Chicago and one school from New York. Six of these schools were private Christian schools, one was a laboratory school at a public research university, and one was a public school. The schools were similar in racial ethnic diversity and yielded a moderately diverse sample (68% white, 11.3% African American, 10.3% Hispanic, 8.2% Asian, and 2.1% unknown). School classroom size ranged from 15-25 students with participation rates per classroom ranging from 30 – 60%. The sample includes 49 males and 48 females.

Measures

Table 1 provides an overview of each measure and corresponding construct examined in this study.

SSIS parents and teachers. Parents and teachers rated children's SC using the Social Skills Improvement System (SSIS; approximate completion time is 10 minutes)—a widely used, a multi-informant measure of social competence and competing problem

behaviors. The 46-item Social Skills Composite is comprised of seven subscales with 6 -7 items per scale: Communication, Cooperation, Assertion, Responsibility, Empathy, Engagement and Self-Control. Informants were asked to rate the frequency in which the child engages in certain behaviors using a 4-point Likert scale (“Never,” “Sometimes,” “Often,” “Always”). The informants also rated the importance of the behavior on a 3-point scale (“Not important,” “Important,” “Critical,”). The rating scale is made up of four distinct scales: social skills, problem behaviors and an academic competence scale (teacher form only; Gresham et al., 2011). Only the Social Skills scale and its various subscales were used for this study.

Team members hand-scored this measure. Norms based on age were used to produce total social skills standard scores as well as raw scores for each of the subscales. As reported by Gresham and colleagues (2011), the internal consistency and test-retest reliability for both parent and teacher SSIS scales and subscales are reasonably robust. Specifically, the coefficient alphas for both the teacher- and parent-rated social skills scales are in the mid- to upper-.90s. The subscales in each category have median reliabilities in the mid- to high-.80s on both the parent and teacher forms. All the Cronbach’s alpha coefficients for individual subscales are equal to or exceed .70. Furthermore, the test-retest indices for total social skills were .82 for the teacher form and .84 for the parent form (Gresham et al., 2011).

In terms of the study sample, total scale reliabilities were .91 and .96 for parent (N= 83) and teacher (N= 97) ratings, respectively. Subscale Cronbach’s alpha coefficients ranged from .67 to .89 for paren-rated subscales and from .81 to .91 for teacher-rated subscales.

More structured measure of theory of mind. Children were administered the ToM subtest from the NEPSY-II (Korkman et al., 2007) with an approximate testing time of 10 minutes, to assess participants' ability to understand that others have thoughts, ideas, and feelings that may be different from one's own. The test includes several false belief tasks including unexpected contents tasks, unexpected locations task, and a second order false belief task. Other tasks involve making distinctions between appearance and reality. Finally, the last six items of the test are contextual and provide pictures of a girl in various stereotypic emotion – provoking situations (e.g. on a rollercoaster or hurting her foot) with her face hidden from view. Participants are required to point to a pictured facial expression that describes how the character would feel in that situation. The measure provides a scaled score with a mean of 10 and a standard deviation of 3. A higher NEPSY II ToM score indicates that the child was able to respond correctly increasingly difficult tasks, presented in different ways (e.g. pictures, stories, physical demonstrations, and combinations of these). Typically, more difficult tasks had more details or cues to consider when responding.

The ToM subtest is standardized and normed with adequate reliability. Split half reliability is above .80 for the ToM subtest for the age group of 5–6 years. Test-retest reliability for ToM total score in 5–6 years of age group is .77 (Brooks, Sherman, & Strauss, 2009). Initially, the 6 contextual items were going to be excluded in this study due to the task demands: These items resemble situation-based emotion knowledge tasks, and do not actually require an understanding of other's beliefs (i.e., ToM). This extracted 14-item scale had a split-half reliability of .75 (N= 97). However, preliminary descriptive correlations between this scale and the parent- (r = .128, p = .256) and teacher- rated(r =

.244, $p < .05$) social skills total scores were not meaningfully different from the same correlations using the original scaled score (parent: $r = .067$, $p = .552$; teacher: $r = .259$, $p < .05$). Subsequently, it was decided to use the original scaled score in this study in order to aid the comparison of results to previous studies. In this sample, the scale had a split-half reliability of .74 ($N=97$).

Less structured measure of theory of mind. Children were administered the TAT (administration time approximately 15 minutes). The TAT is a non-standardized, non-normed performance measure that gives insight into social scripts, schemas and perception utilized by the participant. The stories are coded numerically and have been associated with social competence and other indicators of children's adjustment in prior research. For example, Annotti and Teglasi (2017) found relations between the two coding categories used in this study (abstraction and perceptual integration) and teacher-rated social behaviors. Another study that used the TAT with the same scoring system as used in this study indicated that children rated as high in empathy (a component of SC) by their teachers received higher scores on the storytelling measure than their low-empathy peers (Locraft & Teglasi, 1997). In addition, the TAT has been used to investigate social information processing and teacher ratings of aggression (Simcox, 2009) and to distinguish emotionally disabled children from nonemotionally disabled children (Lohr, Teglasi & French, 2004; McGrew & Teglasi, 1990).

The TAT stories used in this study were coded by two researchers under the supervision of an expert in the TAT field. Participants' stories were numerically coded for level of abstraction (range of 1 - 4) and perceptual integration (range of 1 - 5) where higher scores require children to interpret the scene beyond mere description and to

coordinate among characters' thoughts, feelings, actions and outcomes. A fixed effects ICC was calculated for absolute agreement, and the results yielded reliability scores of .90 for Abstraction, and .89 for Perceptual Integration. When treating each story as a separate item, internal scale reliability for the sample was .92. Next, a total TAT score was calculated based on the average of these scales with scores ranging from 1 – 4.5. With training and practice, coders have shown inter-rater reliability in each of these coding parameters to be .80 or higher (Blankman, Teglassi, & Lawser, 2002). In a recent study, Anotti and Teglassi (2017) established interrater reliabilities of .90 for Abstraction and .89 for Perceptual Integration.

Affect Recognition. A measure of affect recognition was administered in order to provide descriptive information about this basic ability within the sample. Children were administered the Affect Recognition subtest of the NEPSY-II (Korkman et al., 2007). The NEPSY-II Affect Recognition task was designed to assess children's ability to recognize emotions from photos of children's faces. It has been normed with typically developing children aged 3–16 years and provides age based scaled score with a mean of 10 and a standard deviation of 3. During the task, participants were presented with pictures of faces and asked to point to two pictures that displayed the same emotional expressions. According to the test manual, split half reliability is .67 for the Affect Recognition subtest for the age group of 5–6 years (Korkman et al., 2007).

Vocabulary. WPPSI-IV Vocabulary subtest was administered as a proxy for a language measure (administration takes around 10 minutes). Children were asked what several words mean (ex. "What is a dog?"; Wechsler, 2002). The measure provides age-

based scaled scores with a mean of 10 and a standard deviation of 3. Split half reliability is .89 for the Vocabulary subtest.

Procedure

Procedure for recruitment and data collection. These procedures were part of a larger study that spanned from Spring 2012 to the present. Therefore, the data is archival. The research team, led by Dr. Hedwig Teglassi, consisted of 6 – 8 graduate students at any given time who were enrolled in the University of Maryland College Park's school psychology doctoral program. The author of this study joined the team in Fall 2015. IRB approval was obtained to conduct a human research study. After contacting and gaining permission from interested school administrations, the research team made presentations to parents and teachers attending a Back to School night where they explained the purpose of the study and requirements of parents and children who chose to participate. A letter detailing the study, including IRB information and a consent form, was placed in the parent mailbox of children attending the kindergarten class. The variables examined in the larger study include social competence, temperament, executive functioning, emotion understanding, ToM, and school readiness. Questionnaires were sent to parents' homes using the parent mailbox and hand-delivered to the teachers' classrooms. Comprehensive data on participation rate was unavailable for the earlier years of the study but was overall estimated at around 40% of parents and their children. All kindergarten teachers agreed to participate during the recruitment process. Interestingly, none of the studies examined in this paper reported participation rates for parents, teachers, and children participating in school based psychological studies. Given that only about 40% of parents chose to participate in this study, there is some possible

unknown sample bias. Some factors that may have influenced parent and child participation include time availability and general interest or positive attitudes towards research.

Children were taken out of the classroom during free time for 20 to 30-minute testing sessions until they had completed all performance measures (approximately 40–50 minutes total administration per subject). Graduate student members of the research team underwent training in administration of all performance measures. Training consisted of the researchers reviewing instructions, items, responses, and stimulus materials under the guidance of an experienced team member prior to assessing child participants. New researchers then observed an experienced researcher administering the assessment to a child participant, prior to administering the assessment independently.

Research question 1. Prior research suggests that associations between ToM and particular behavioral items included in social competence questionnaires would vary in accord with clarity of expectations for that behavior in the observed context and with respect to demands of the performance task. However, since clarity of expectations for the same behavior likely varies with context or even informant, no informant-specific hypotheses were offered.

In order to address research question 1, bivariate correlational analyses were run between parent- and teacher-rated social skills total scores, subscales, and items and the two ToM performance tasks. Research question 1 contained two parts, with question 1a being: *Can SC items be classified based on relations with more or less structured measures of ToM by considering a relevant underlying conceptual similarity (associations between conventional and intentional items mirroring more and less*

structured tasks)? To address this question, teacher- and parent-rated data were examined separately. Correlations were first examined at the total scale and then the subscale levels. Subsequently, item correlations with a minimum effect size of $r = .25$ were flagged for further inspection. This effect size was set to reduce the number of potentially less meaningful relations in this large set of correlations. This specific effect size was chosen based on the findings of Meyer and colleagues (2001) who examined correlations between different measures of psychological constructs from over 125 meta-analyses and subsequently found that a correlation of .30 was as good as it gets in the field.

The nature of these flagged items was evaluated as having more or less clear response expectations, and conclusions were drawn about potential patterns between these items and the performance measures they did or did not relate to (more or less structured ToM tasks). These distinctions were guided by Annotti and Teglasi's (2017) criteria for specifying social skills items as *conventional* (behaviors where clear response expectations, such as specific elicitors of context, allow the child to act upon knowledge of social conventions) or *intentional* (behaviors where response expectations are unclear, therefore social scripts cannot solely guide behavior and the child has to form personal intentions informed by understandings of ToM and social causality). These patterns were examined separately by two researchers (the author of this study as well as the principal investigator of the larger study, Dr. Teglasi) who subsequently conferred and agreed upon final classifications. To answer research question 1b: *Can social skills items be similarly classified for parent and teacher informants?* correlations tables of parent and teacher ratings with the two ToM tasks were visually inspected side by side and conclusions were drawn about the patterns of overlap (and lack thereof) between subscales and items.

Research question 2. *Does children's language ability influence the relations between social skills and different measures of ToM?* Given the fact that children's language ability is theoretically inherent to social competence (Harris, 2005; De Villiers & De Villiers, 2000) and communication forms part of most social competence definitions (Gresham, 1998), the correlations examined in this study were presented in two ways: one controlling for vocabulary and the other without. One might argue that controlling for vocabulary would hamper the external validity of the findings as social competence (and the use of social skills) do not exist outside of language and communication. On the other hand, studies linking children's social competence with outcomes often control for vocabulary. To answer this question, tables of bivariate and partial correlations controlling for vocabulary were examined side by side to compare and draw conclusions about the influence of vocabulary separately for teacher- and parent-rated social skills. These patterns were explored to clarify the theoretical and practical implications of controlling or not controlling for vocabulary when linking social competence with ToM.

Chapter 4: Results

Preliminary Analyses

Using SPSS, descriptive statistics were run for age, gender, ethnicity, school, and teacher. Mean, range, and standard deviations were obtained for all variables (see Table 2). Despite the data being nested across various schools and classrooms, intraclass correlation coefficients (ICCs) between School and SSIS teacher (school level) were not necessary as this study was purely exploratory (see Table 3 for student frequencies by school). Inferences were not made about differences between individuals within the study sample, which would have warranted accounting for potential differences between schools (Pedhazur, 1997).

Demographic Data. The sample consisted of 97 children (50.5% male) and was moderately diverse (68% white, 11.3% African American, 10.3% Hispanic, 8.2% Asian, and 2.1% unknown). Participants' age ranged from 60 to 83 months ($M = 69.82$, $SD = 4.80$).

Comparison of sample performance against published test norms.

Participants' performance on the external correlate variables, as well as the social skills rating scales, were compared to the norms published by the authors of each test or rating scale. An independent samples t-test indicated study participants performed significantly better on the WPPSI-III Vocabulary subtest ($M=11.80$, $SD = 2.48$) than the published norm ($M = 10$, $SD = 3$; $t(395) = 5.35$, $p < .01$). An F-test indicated that the variance in performance was reduced in this sample, compared to the published norm ($F_{(299,96)} = 1.56$, $p < .05$). In terms of Affect Recognition, the study sample's performance ($M = 10.63$; $SD = 2.58$) was comparable to that of the norm group ($M = 10$, $SD = 3$; $t_{(194)} = 1.57$; $p = .12$). Similarly, participant's performance on the NEPSY-II Theory of Mind subtest

(henceforth referred to as the “more structured ToM task”; $M = 10.61$, $SD = 2.59$) was comparable to the published norms for this age group ($M = 10$, $SD = 3$), based on the results of a t-test ($t_{(195)} = 1.53$, $p = .13$). An F-test indicated that the variance in this sample was not significantly different from the normed SD ($F_{(99,96)} = 1.34$, $p < .05$). Participants in this study obtained a mean TAT total test (henceforth referred to as the “less structured ToM task”) score of 2.51 (test range: 1- 4.5) with a SD of .67. Published norms were not available for comparison.

The SSiS (henceforth referred to as the “social skills scale”) provides specific norms for the parent and teacher rating scales for the age group of 5 years to 12 years 11 months. Tables 4 and 5 provide detailed comparisons of the sample means and standard deviations to those of the normative samples for the teacher and parent rating scales, respectively. Results of a t-test indicated that the study sample ($M = 100.45$; $SD = 13.81$) performed significantly better than the normed sample ($M = 94.7$; $SD = 22$) on the teacher-rated Social Skills Total Score ($t_{(643)} = 2.46$, $p = .01$). A two-tailed F-test for equality of variances indicated that the variance of the sample’s teacher-rated Social Skills Total Scores was reduced compared to the normed variance ($F_{(549,92)} = 2.54$, $p < .01$). T-tests between the sample and normed subscale mean scores indicated nonsignificant differences between all subscales with the exception of Engagement, where study participants ($M = 15.31$, $SD = 3.29$) scored higher than the norm group ($M = 14.4$; $SD = 3.6$; $t_{(643)} = 2.30$, $p = .02$; see Table 3 for details). Further F-Tests indicated no significant differences between the variances of the sample and normed teacher-rated social skills subscales (see Table 4).

For the parent-rated social skills scale, the study sample's Social Skills Total Score ($M = 96.60$, $SD = 13.16$) was comparable to the normed sample ($M = 98.4$, $SD = 18.1$; $t_{(2078)} = 0.88$, $p = 0.38$). However, similar to the teacher ratings, the study sample had reduced variance: $F_{(1999,79)} = 1.89$, $p < .01$. T-tests between the sample and normed subscale mean scores indicated nonsignificant differences between most subscales with the exception of Responsibility (study sample: $M = 11.94$, $SD = 2.83$; norm group: $M = 13.1$, $SD = 3.1$) and Self-Control (study sample: $M = 11.15$, $SD = 3.21$; $M = 12.2$, $SD = 3.8$), where study participants scored overall lower than the norm group ($M = 12.2$, $SD = 3.8$; Responsibility: $t_{(2078)} = 3.29$, $p < .01$; Self Control: $t_{(2078)} = 2.44$, $p = .01$; see Table 5 for details). Further F-Tests indicated no significant differences between the variances of the sample and normed parent-rated Social Skills subscales, with the exception of Self-Control where the norm group ($SD = 3.8$) had slightly greater variance than the sample group ($SD = 3.21$; $F_{(1999,79)} = 1.40$, $p = .05$; see Table 5).

Comparison of mean parent and teacher social skills ratings. Results of paired samples t-tests indicated that teachers rated children's overall social skills (total score) higher than parents did ($t = -2.68$, $p < .01$; teacher: $M = 101.67$; $SD = 13.85$; parent: $M = 96.33$, $SD = 13.16$). However, parent and teacher ratings on 5 of the 7 subscales were comparable, with the exception of Assertiveness and Self-Control, which were rated higher by teachers (see Table 6 for detailed results).

Assumptions for Correlations. Exploratory descriptive analyses of skewness, kurtosis, and histograms indicated that the scale and subscale level variables of interest (Vocabulary, more structured ToM, less structured ToM, and teacher- and parent-rated social skills total scores and subscales) approximated normal distributions. Visual

inspection of scatterplots indicated linear relations between each of the SSiS scale and subscale variables and the performance (ToM and Vocabulary) variables.

Correlations between variables. Pearson and Spearman correlations were conducted to examine the relations between each of the scale level variables (gender, age, vocabulary, The more structured ToM task, the less structured ToM task, Teacher Social Skills and Parent Social Skills). Spearman correlations indicated only one significant relation between gender and the rest of the broad study variables, where teachers rated girls' social skills higher than boys' ($r = .293, p < .01$; see Tables 7, 8 and 9 for complete results). A further investigation of the teacher-rated social skills subscales indicated significant positive correlations between gender (girls) and five out of the seven subscales (Communication: $r = .280, p < .001$; Cooperation: $r = .321, p < .001$; Responsibility: $r = .238, p < .001$; Empathy: $r = .242, p < .05$; Self-Control: $r = .248, p < .05$). Results from Pearson correlations indicated that Age was positively related to the less structured ToM task ($r = .381, p < .01$), but not to any other variables (see Table 7 for results). This was to be expected as, unlike the rest of the variables, the less structured ToM task has not been normed according to age group. Vocabulary was positively related to the more structured ToM task ($r = .361, p < .01$), the less structured ToM task ($r = .328, p < .01$), and teacher-rated social skills total score ($r = .364, p < .01$), but not the parent-rated social skills total score ($r = .053$). On the subscale level, Vocabulary significantly and positively correlated with all but one teacher-rated social skills subscale: Self-Control (Communication: $r = .339, p < .001$; Cooperation: $r = .320, p < .001$; Assertion: $r = .358, p < .01$; Responsibility: $r = .375, p < .01$; Empathy: $r = .293, p < .001$; Engagement: $r = .206, p < .05$; see Table 8). None of the parent-rated social skills subscales were

significantly related to vocabulary (see Table 9) On the item level, vocabulary was significantly and positively correlated with 29 out of 46 teacher-rated items, and with 1 out of 46 parent-rated items (See Table 10 for a full list of correlations).

The more and less structured ToM tasks were positively correlated with each other ($r = .383, p < .01$). However, whereas the less structured ToM task positively related to both parent- ($r = .236, p < .05$) and teacher- ($r = .425, p < .01$) rated social skills total scores, the more structured ToM task only related to teacher-rated social skills total score ($r = .259, p < .05$) and not parent-rated social skills total score ($r = .067$). On a subscale level, the less structured ToM task correlated positively with all teacher-rated social skills scales ($r = .300 - .412, p < .001$; Table 7) and with three out of 7 parent-rated scales (Cooperation, Responsibility, and Self-Control; $r = .238 - .285$; Table 9). Finally, parent- and teacher-rated SSiS did not relate significantly to each other ($r = .153, p = .181$). In fact, none of the seven matched teacher- and parent-rated SSiS subscales correlated significantly ($r = -.043$ to $.205$; Table 11).

Social skills scale items. Items were mostly normally distributed and visual examination of scatterplots indicated that some but not all exhibited linear relations with the external variables. Specifically, linearity could not be established with 11 out of 46 teacher-rated items due to low variability (a score range of 2 on the 4-point scale). This affected the Cooperation (4 out of 6 items) and Engagement (3 out of 7 items) subscales the most, whereas Empathy had 2 items and Communication and Responsibility each had 1 item with such low variability. On the parent scale, 15 out of 46 items had the same issue with a score range of only 2 on the 4-point scale. For parent-rated items, Cooperation (6 out of 6 items) and Engagement (4 out of 7 items) were again flagged as

the subscales most affected by low variability. The Communication scale also had 3 out of 7 items with a restricted range whereas the Assertion and Empathy scales each had one such item.

Exploratory Analyses

Given the exploratory nature of this study, the research questions were framed within the overall theoretical framework that a child's ability to understand and predict other's mental states (ToM) works toward better social skills. Thus, the expectation was that correlational analyses would show this relation, at least on the scale level. That is, between the performance measures of ToM and the Social Skills composite scales as rated by parents and teachers. While it was expected that there would be variation between the particular social skills subscales and items and their patterns of relations between the relatively more structured and unstructured ToM tasks, no particular patterns were predicted as it remained an open question. This study therefore explored *any* potential patterns with the idea that relations may be useful to classify items as relatively more intentional or conventional in nature. It was theorized that the clarity of response expectations of the actual performance measures and items on the rating scales may provide a pattern of distinct differences between these types of social skills items.

Research question 1. What patterns of relations can be discerned between social skills subscales and items on a widely-used questionnaire and two types of ToM performance tasks? To address this research question, bivariate correlational analyses were run between social skills total scores, subscales, and items and the two ToM performance tasks. Separate analyses were conducted for parent and teacher ratings and differences between them were not tested. Research question 1 contained two parts,

with question 1a being: *Can items be classified based on relations with more or less structured measures of ToM? Is there some underlying conceptual similarity among items (conventional or intentional) that are related to an external criterion (more or less structured tasks)?* To address this question, correlations were first examined at the total scale and then the subscale level. Subsequently, item correlations with a minimum effect size of $r = .25$ were flagged for further inspection. The nature of these flagged items was evaluated as having more or less clear response expectations, and conclusions were drawn about potential patterns of relations between these items and the performance measures (more or less structured ToM tasks). The following section explores the results for teacher ratings and parent ratings separately.

Correlations between teacher-rated social skills scores and ToM measures. In

line with the assumed theory, teacher-rated social skills total scores related positively to both the less structured ($r = .425, p < .01$) and more structured ($r = .259, p < .05$) measures of ToM. Results of a two-tailed asymptotic z-test indicated a non-significant difference between the two correlations ($z = 1.247, p = .21$). At the minimum effect size criterion of $r = .25$, the more and less structured ToM tasks correlated with a total of 12 and 29 out of 46 social skills items, respectively (see table 12). The relations between the teacher-rated SSiS subscales and items and the ToM measures were as follows:

SSIS Subscale and Items Rated by Teachers	More structured ToM	Less structured ToM
Communication (N = 95 – 96)	.166	.334**
Says “thank you”	.060	.083
Takes turns in conversations	.243*	.268**
Speaks in appropriate tone of voice	.230*	.329**
Uses gestures or body appropriately with others	.212*	.299**
Says “please”	-.015	.158
Responds well when others start a conversation or activity	.288**	.255*
Makes eye contact when talking	.186	.226*

* $p < .05$; ** $p < .01$

Communication. On the subscale level, ToM as measured with the less structured ToM task significantly related to teacher-rated Communication scores ($r = .334, p < .001$). However, the relation between the more structured ToM task and teacher-rated Communication was non-significant ($r = .166$). The difference between the two correlations was non-significant ($z = 1.209, p = .23$). Two out of six items on this subscale had no significant relation to either performance measure. These items (“says please” and “says thank you”) may be conceptualized as rote behaviors that are unrelated to ToM. The same four items were significantly related to both the more structured ToM task ($r = .212 - .288, p < .001 - .05$) and the less structured ToM task ($r = .255 - .329, p < .001 - .05$). While all four items met the .25 effect size requirement for their relation to the less structured ToM task, only one met this requirement in terms of the more structured ToM task. These four items all require a nuanced understanding of unclear social situations and the minds of others in order to communicate appropriately. One item related only to the less structured ToM task. Upon examining these relations, it is clear that certain items pertaining to less clear response expectations require the use of ToM. However, the findings do not support the proposed idea that items with more clear response expectations (like the items involving manners) would relate only to the more structured ToM task.

SSIS Subscale and Items Rated by Teachers (N = 95 – 96)	More structured ToM	Less structured ToM
Cooperation	.308**	.396**
Follows your directions	.415**	.358**
Completes tasks without bothering others	.330**	.406**
Pays attention to your instructions	.381**	.382**
Follows classroom rules	.196	.203
Participates appropriately in class	.401**	.390**
Ignores classmates when they are distracting	.185	.252*

* $p < .05$; ** $p < .01$

Cooperation. For this subscale, ToM as measured with both the less structured ToM task ($r = .396, p < .001$) and the more structured ToM task ($r = .308, p < .001$) significantly related to teacher-rated Cooperation scores. The difference between the two correlations was non-significant ($z=0.663, p=.51$). Only one item was not related to either ToM task, whereas five out of six and four out of six items related to the less structured and more structured ToM task at the $r=.25$ effect size level, respectively. This scale demonstrated the strongest correlations with both ToM measures, ranging from $r = .330$ to $r = .415$ for the more structured ToM task and from $r = .252$ to $r = .406$ for the less structured ToM task. The majority of these items describe behaviors where children intentionally need to read situations to know when to follow directions and pay attention.

SSIS Subscale and Items Rated by Teachers (N = 95 – 96)	More structured ToM	Less structured ToM
Assertion	.229*	.330**
Asks for help from adults	.035	.103
Questions rules that may be unfair	.014	.158
Stands up for herself/himself when treated unfairly	.171	.207*
Says when there is a problem	.249*	.265**
Expresses feelings when wronged	.309**	.285**
Stands up for others who are treated unfairly	.128	.207*
Says nice things about herself/himself without bragging	.260*	.327**

* $p < .05$; ** $p < .01$

Assertion. Teacher-rated Assertion significantly related to both the more structured ToM task ($r = .229, p < .05$) and the less structured ToM task ($r = .330, p < .001$), however, this scale had a low number of items that related to ToM performance. The difference between the two correlations was non-significant ($z = 0.73, p = .46$). Only three items met the effect size requirements, and they related significantly to both ToM measures. Two of the items that did not meet the set requirements appear to have a common theme of not necessarily lending themselves to linear relations to ToM and

general social competence: These items involve asking for help from adults and questioning rules that are interpreted as unfair. While occasionally engaging in these behaviors may be adaptive, doing so “often” or “always” (as indicated by scale ratings) may imply that the child is overly dependent on others and unable to judge social situations (and others’ mental states) accurately. Two items had significant but reduced relations to the less structured ToM task and non-significant relations to the more structured ToM task. These items involve standing up for oneself or others when treated unfairly. These complex skills may be beyond the general scope of kindergartener’s social competence. The remaining three items relating to both ToM tasks refer to intentional, self-directed behaviors involving identifying and addressing social tension or expressing oneself in an adaptive way.

SSIS Subscale and Items Rated by Teachers (N = 93 – 96)	More structured ToM	Less structured ToM
Responsibility	.239*	.412**
Is well-behaved when unsupervised	.292**	.296**
Takes responsibility for her/his own actions	.308**	.402**
Respects the property of others	.072	.267**
Takes care when using other people’s things	.104	.270**
Acts responsibly when with others	.201	.348**
Takes responsibility for part of a group activity	.227*	.355**

* $p < .05$; ** $p < .01$

Responsibility. Teacher-rated Responsibility significantly related both the less structured ToM task ($r = .412, p < .001$) and the more structured ToM task ($r = .239, p < .05$). The difference between the two correlations was non-significant ($z = 1.287, p = .20$). This teacher-rated subscale had the strongest relation to the less structured ToM task with the only correlation above .4, with the exception of the total social skills score. All six items met the effect size requirement for consideration in terms of their significant relation to the less structured ToM task, whereas only two items met the requirement for

the more structured ToM task. In terms of response expectations, there does not seem to be a conceptual difference between the items that related to one as opposed to both performance measures.

SSIS Subscale and Items Rated by Teachers (N = 95 – 96)	More Structured ToM	Less Structured ToM
Empathy	.206*	.308**
Tries to comfort others	.161	.165
Forgives others	.214*	.349**
Shows concern for others	.238*	.278**
Feels bad when others are sad	.093	.204*
Shows kindness to others when they are upset	.163	.165
Is nice to others when they are feeling bad	.112	.244*

* $p < .05$; ** $p < .01$

Empathy. Teacher-rated Empathy significantly related to both the more structured ToM task ($r = .206, p < .05$) and the less structured ToM task ($r = .308, p < .01$), however, this scale had the lowest number of items that related to ToM performance. The difference between the two correlations was non-significant ($z = 0.73, p = .47$). None of the items met the effect size requirement for considering their relations to the more structured ToM task, and only two met the requirement for the less structured ToM task. These two items (“forgives others” and “shows concern for others”) may require more insight into another’s mind in order to act than the remaining items that all reflect showing kindness to others who appear to be upset. You do not need to understand the nuances behind why someone is upset to show them kindness, where forgiving someone or being worried or concerned about them does require that.

SSIS Subscale and Items Rated by Teachers (N = 92 – 96)	More structured ToM	Less structured ToM
Engagement	.182	.300**
Makes friends easily	.211*	.162
Interacts well with other children	.223*	.348**
Joins activities that have already started	.149	.293**
Invites others to join in activities	.220*	.286**
Starts conversations with peers	.322**	.183

Introduces himself/herself to others	.230*	.211*
Participates in games or group activities	.186	.262*

* $p < .05$; ** $p < .01$

Engagement. Teacher-rated Engagement significantly related only to the less structured ToM task ($r = .300, p < .01$) and not to the more structured ToM task ($r = .182, p = .08$). The difference between the two correlations was non-significant ($z = 0.84, p = .40$). Four of the seven items met the effect size requirement for considering their relations with the less structured ToM task, and one item met the requirement for the more structured ToM task. Three of the items that related only to less structured ToM describe behaviors that involve intentional, reciprocal behaviors where the child must choose how to respond to a social invitation or initiate one.

SSIS Items Rated by Teachers (N = 91 – 93)	More Structured ToM	Less Structured ToM
Self-Control	.108	.303**
Stays calm when teased	-.042	.204*
Takes criticism without getting upset	.027	.075
Resolves disagreements with you calmly	.163	.256*
Responds appropriately when pushed or hit	.150	.345**
Makes a compromise during a conflict	.289**	.305**
Stays calm when disagreeing with others	.207	.307**
Uses appropriate language when upset	.112	.308**

* $p < .05$; ** $p < .01$

Self-Control. Similar to the previous scale, Teacher-rated Self-Control significantly related only to the less structured ToM task ($r = .303, p < .01$) and not to the more structured ToM task ($r = .108$). The difference between the two correlations was non-significant ($z = 1.36, p = .17$). Five of the seven items met the effect size requirement for considering their relations with the less structured ToM task, and one item met the requirement for the more structured ToM task. As opposed to the two items that did not relate to the less structured ToM task (“stays calm when teased” and “takes criticism without getting upset”), those that did relate significantly describe behaviors that involve

active prosocial participation in conflict. These require a better understanding of the situation than merely remaining calm in any given conflict.

Correlations between parent-rated social skills scores and ToM measures.

Unexpectedly, the parent-rated social skills total scores related positively only to the less structured ToM task with a relatively weak correlation ($r = .236, p < .05$). The relation between parent-rated SSiS total scores and the more structured ToM task was nonsignificant ($r = .067$). Table 12 contains the correlational results for all parent-rated social skills subscales and items with the two ToM measures. Furthermore, there were no significant relations between the more structured ToM task and any of the parent-rated social skills subscales. Only three subscales related significantly to the less structured ToM task: Cooperation ($r = .242, p < .05$), Responsibility ($r = .238, p < .05$), and Self-Control ($r = .285, p < .05$). The differences between the correlations with each of the ToM tasks with each subscale were all non-significant (Table 13). Given the item level required effect size of .25 or more, none of the subscales contained at least two significant relations with a performance measure that could be investigated. In fact, out of the scale 46 items, none correlated significantly with the more structured ToM task and only 4 correlated significantly with the less structured ToM task with an r value of .25 or higher (Table 12). Therefore, given the lack of correlations, no case can be made for the proposed divide between conventional/ intentional skills as rated by parents on the subscale level.

Synthesis of results based on teacher and parent social skills ratings. The answer to research question 1b: *Can social skills items be similarly classified for parent and teacher informants?* remains unclear. Given the lack of significant correlations

between parent-rated social skills and the ToM measures, few meaningful comparisons between patterns of relations among scale items can be made (Table 12). Of the total of five parent-rated items that significantly related to the less structured ToM task with an effect size of $r=.25$ or higher, four of those met the same correlation criteria for the teacher-rated items (Pays attention to your instructions (Cooperation); Is well-behaved when unsupervised (Responsibility); Does what he/she promised (Responsibility); Resolves disagreements with you calmly (Self-Control); see Table 12). Despite the low number of significant parent-rated scale and item correlations, the less structured ToM more often showed relations with social skills than did more structured ToM within each informant. More specifically, the less structured ToM task was significantly related to three parent rated subscales (Cooperation, Responsibility, and Self-Control). It is worth noting that among the seven parallel subscales, two of the same teacher-rated subscales (Cooperation and Responsibility) had the strongest relations with this less structured ToM.

Research question 2. Does children’s language ability influence the relations between social skills and different measures of ToM? A general point of interest in this study was whether the relations between social skills and ToM performance tasks would change when controlling for language ability (using a vocabulary test as a proxy) and this question was examined separately for parent and teacher informants. This question was examined by first looking at correlations between the social skills scale, subscales and items with the vocabulary variable. As described in the preliminary analyses, distinct differences existed in the relations between teacher and parent-rated social skills and the vocabulary variable: Whereas vocabulary was positively and

significantly correlated with the teacher-rated social skills total scale and all but one of the subscales (Self-control), there were no significant relations between the vocabulary and any of the parent-rated social skills total or subscales (Tables 8 and 9). On an item level, vocabulary was significantly and positively correlated with 29 of 46 teacher-rated items, and with 1 of 46 parent-rated items (Table 10).

Subsequently, partial correlations were run between the social skills variables and the two performance tasks while controlling for vocabulary. Given the lack of significant relations between parent-rated social skills and vocabulary, the influence of vocabulary on only teacher-rated social skills and ToM measures is further discussed. Tables 14 and 15 provide a side-by-side comparison the results of the bivariate and partial correlations the two ToM tasks with teacher- and parent-rated social skills, respectively. On the scale level, the relation between teacher-rated total social skills and the more structured ToM task was reduced from $r = .259$ ($p = .01$) to $r = .030$ ($p = .80$), thereby losing its significance. However, the relation with the less structured ToM task remained significant and only decreased from $r = .383$ ($p < .01$) to $r = .323$ ($p < .01$). Similarly, the teacher-rated subscale relations with the more structured ToM task were more severely affected by the influence of language than the less structured ToM task was. The magnitude of all relations between teacher-rated subscales and the more structured ToM task were greatly reduced when controlling for vocabulary: The three subtests with nonsignificant bivariate correlations with the more structured ToM task, namely

Communication (bivariate: $r = .166$, $p =$; partial: $r = .050$, $p = .63$), Engagement (bivariate: $r = .182$, $p =$; partial: $r = .102$; $p = .23$) and Self Control (bivariate: $r = .182$, $p = .30$; partial: $r = .060$, $p = .57$) remained nonsignificant. Assertion (bivariate: $r = .229$, p

< .05; partial: $r = .115, p = .27$) and Responsibility (bivariate: $r = .239, p < .05$; partial: $r = .120, p = .25$), and Empathy (bivariate: $.206, p < .05$; partial: $r = .112, p = .28$) became nonsignificant, whereas Cooperation (bivariate: $r = .308, p < .01$; partial: $r = .218, p < .05$) was the only subscale that maintained a significant relation with the more structured ToM task when controlling for vocabulary.

The effect of vocabulary on the less structured ToM task was strikingly different with all seven teacher-rated subscales retaining similar effect sizes using partial correlations when compared to the bivariate correlations: Communication (bivariate: $r = .334, p < .01$; partial: $r = .251, p < .05$); Cooperation (bivariate: $r = .396, p < .01$; partial: $r = .325, p < .01$); Assertion (bivariate: $r = .330, p < .01$; partial: $r = .241, p < .05$); Responsibility (bivariate: $r = .412, p < .01$; partial: $r = .330, p < .01$); Empathy (bivariate: $.308, p < .01$; partial: $r = .239, p < .05$); Engagement (bivariate: $r = .300, p < .01$; partial: $r = .239, p < .05$) and Self Control (bivariate: $r = .303, p < .01$; partial: $r = .273, p < .05$). As with the total social skills score, each of the relations became slightly weaker when controlling for vocabulary but remained significant.

At the item level, the number of meaningful significant correlations ($r = .25$ or above) between teacher-rated social skills and the two ToM measures was reduced from 12 to 5 for the more structured ToM task and from 29 to 12 for the less structured ToM task when controlling for the influence of vocabulary. Subsequently, four of the seven subscales (Communication, Assertion, Empathy, and Engagement) no longer contained at least two meaningful correlations with a performance measure that could be investigated. The Cooperation scale was the least affected by the influence of vocabulary with 4 items remaining associated with the less structured ToM task and three of the same items

remaining associated with the more structured ToM task. On the Responsibility subscale, only three items remained positively associated with the less structured ToM task and none with the more structured ToM task. The items that remained associated with the less structured ToM task capture the most “intentional” items on this subscale, involving active rather than passive behaviors. For example, items like “Takes responsibility for her/his own actions” remained positively associated with the less structured ToM task with vocabulary controlled, the association with more passive items like “Takes care when using other people’s things” weakened markedly. Finally, on the Self Control scale, only two correlations with the less structured ToM task stayed above the $r = .25$ cut off point. Both of these describe responding to provocation “appropriately” – suggesting that a more nuanced ToM is necessary than items that no longer made the cut off such as “Stays calm when disagreeing with others.”

Taken together, there was a clear pattern showing that children’s vocabulary scores were significantly related to teacher but not parent-rated social skills on the scale, subscale and item levels. For teacher-rated social skills, it was clear that controlling for vocabulary reduced number of significant relations between the social skills scale, subscales and items and both types of ToM, but more so for the more structured ToM task than for the less structured ToM task. In other words, the association between teacher-rated social skills and the less structured ToM task appeared less dependent on vocabulary compared to the more structured ToM task. For the less structured ToM task, it is notable that some of the Responsibility and Self-Control items that remained strongly associated with this task appeared to describe some of the most intentional behaviors on those scales, as agreed upon by both raters.

Chapter 5: Discussion

The main objective of this study was to examine patterns of relations between social skills items and children's performance on two ToM tasks. It was proposed that such patterns might be explained by the variance in structure and response expectations characterizing the items from the perspective of a single informant, both in measurement and real-life settings. More specifically, that performance on a more structured performance task of ToM would relate to conventional social skills that suffice in more structured situations with clear response expectations where basic knowledge of emotions and social conventions are required. Conversely, intentional social skills that involve noticing and making sense of others' beliefs and intentions and acting intentionally in order to navigate social challenges would relate to a less structured performance task of ToM. Whereas some studies have begun to examine these relations (Lalonde & Chandler, 1995; Annotti & Teglasi, 2017), this is the first to systematically examine how specific social skills items relate to different underlying mental processes, namely different types of ToM measures. Moreover, this is the first study to investigate this question within both teacher and parent informants about children's social skills. An additional point of interest in this study was whether the relations between social skills and ToM performance tasks would hold up when controlling for language ability (using a vocabulary test as a proxy). Again, this question was tested separately for parent and teacher informants.

The study findings are discussed in the context of this particular sample, keeping in mind how it compares with normative results provided by the authors of the standardized measures. Next, the patterns of relations between social skills and ToM

performance are discussed separately according to rater (teachers and then parents), followed by a synthesis. Separate sections are then dedicated to some of the most striking findings of the study, namely informant discrepancies and the role of language in relations between social skills and ToM performance. Finally, implications of the study, limitations, and future directions are discussed.

Comparison of Study Sample Performance to Published Norms and Implications for Findings

Compared to published test norms, the study sample performed significantly better and showed reduced variability on the vocabulary task. This may be explained by the largely private schooled sample and well documented links between socioeconomic advantages and children's initial vocabulary and reading scores (Dupéré, Leventhal, Crosnoe, & Dion, 2010). Participants' performance on the more structured ToM task, as well as the measure of Affect Recognition, was comparable to the norm group. While there were no norms available for the less structured task, descriptive statistics indicated that scores were more or less normally distributed, therefore displaying adequate variance to detect relations with other variables. The study sample's teacher-rated SSIS social skills total score and only the Engagement subscale were statistically different (higher) from the norms. For parent ratings, only the Responsibility and Self-Control subscales were statistically different (lower) from the norms. Both raters in this study had reduced variability compared to scale norms. However, the effect sizes were very small on the scales and subscales that differed from the norms and there may not be any meaningful impact of this.

Patterns of Relations between Social Skills and More or Less Structured Measures of ToM

Patterns are discussed separately for teacher and parent informants and although direct comparisons across informants were not made, it was evident that the number of significant correlations with an effect size of at least .25 were very limited for parent informants. Hence, patterns of relations between social competence and ToM within parent informants could not be explored in the same systematic manner as those involving teacher informants. Therefore, patterns are first discussed separately for each informant before conceptual comparisons are drawn.

Patterns with teacher rater social skills. As expected, overall teacher-rated social skills significantly related to both ToM tasks. The relation with the less structured task was $r = .425$, whereas the relation with the more structured task was $r = .259$. ToM relations with each of the social skills subscales yielded a less consistent pattern for the more structured task: Whereas the less structured task related significantly to each of the subscales, the more structured one was only significantly related to Cooperation, Assertion, Responsibility, and Empathy, and not to Communication, Engagement, or Self-Control. The Communication subscale seemed divided in terms of response expectations: about half of the items described rote behaviors that were unrelated to both ToM tasks (e.g. “says thank you). This corresponds with the findings of Lalonde and Chandler (1995), where rule following behaviors (called “conventional” social skills) were unrelated to 3-year-olds’ performance on false belief tasks (a more structured ToM task). This definition matches somewhat with the conception of conventional social skills used in this study, referring to behaviors in situations with clear cues about how to

respond that require little or no understanding of others' intentions in order to respond appropriately. The other half of the items that related only to the unstructured ToM task can be described as intentional behaviors (behaviors in situations that are unclear in terms of how to respond and therefore require an understanding of situational cues along with goal directed behavior) that were also reciprocal in nature (e.g. reading a social situation to communicate with an appropriate tone of voice).

The Cooperation scale largely contained intentional behaviors that related to both the more and less structured ToM tasks. This subscale requires children to read situations and adjust their behavior to pay attention and follow instructions when necessary. The Assertion subscale yielded a clear pattern where about half of the items related to both ToM measures, and the other had related to neither. However, the items that did not relate to ToM may not be relevant to the conventional/ intentional distinction: When looking at the items specifically, seems they don't match the concept of social competence in a linear way. For these items, behaviors rated at the extreme (i.e. as occurring "always") may not describe socially competent behavior. For example, asking for help is adaptive up to a point, where too often becomes problematic. Other items that did not relate to either ToM task described behaviors that may be beyond the skillset of most kindergarteners (e.g. standing up for oneself or others when treated unfairly). Future studies need to examine specific social skills scale items and whether or not they truly relate to age appropriate socially competent behavior in a linear manner. The remaining items relating to both ToM tasks refer to intentional, self-directed behaviors involving identifying and addressing social tension or expressing oneself in an adaptive way.

The Empathy subscale had no items that met the $r = .25$ threshold for relations with the more structured task, and only two related to the less structured task. Empathy research shows that there are two dimensions to the construct, namely affective empathy, the ability to experience and share other's emotions, and cognitive empathy, which involves understanding others' emotions (Cohen & Strayer, 1996). Several of the items on this scale relating to neither ToM tasks only require the recognition of someone's distress to react (affective empathy), and not necessarily an understanding of the reason for distress (e.g. sharing sad emotions or trying to comfort someone who looks upset). Thus, these items can be described as more conventional, as they describe reacting to the explicit social cue of a distressed appearance or behavior. On the other hand, the items that related to unstructured ToM can be described as intentional, as they require an understanding of the nuances behind why someone is upset to forgive or be worried about them (cognitive empathy; e.g. "forgives others").

The Engagement subscale had one item that related with the more structured ToM task and four with the less structured task. Again, two of the three items that did not relate to the less structured ToM task may not conceptually be linearly related to social competence: These items involve introducing oneself and starting conversations. These behaviors may or may not be appropriate, depending on how and when they are enacted. In fact, many children with social skills deficits often introduce themselves and/or start conversations in inappropriate situations (Gresham, Elliot, & Kettler, 2010). Three of the items that related only to less structured ToM describe behaviors that involve intentional, reciprocal behaviors where the child has to choose how to respond to a social invitation or initiate one. As noted earlier with some of the Communication items, several of the

items identified as intentional by both examiners were reciprocal in nature. It makes sense that effective reciprocal exchanges are inherently less structured than one directional rule following or cooperation. On the Self-Control subscales, most items related to the less structured ToM measure. The two items that did not relate to either ToM measure describe passive behaviors where a child reacts to conflict by staying calm. This may be more temperamental and does not necessarily require an understanding of the situation. The remaining five items that related to the less structured measure describe intentional behaviors where the child actively engages in conflict in an appropriate and prosocial manner. These behaviors require flexibility and perspective taking. Table 16 provides a summary of all the teacher-rated social skills items classified as conventional or intentional by both raters.

When examining social skills items across the subscales using the criteria set by Annotti and Teglasi (2017), two raters conferred and agreed that one preliminary pattern seemed relatively clear: The most intentional social skills were consistently related to the less structured measure of ToM. Again, social skills items were classified as intentional when it was determined that, given the unclear response expectations that would be present in the context of the described behavior, behavior is guided by personal intentions informed by understandings of mental state (i.e., ToM) and social causality (Annotti & Teglasi, 2017). This pattern appears to support the proposed theoretical connection between intentional social behaviors in contexts with unclear response expectations and performance on a ToM task with similar performance conditions. Of course, the researchers looked at the patterns of relations in light of specific criteria for considering

items as conventional and intentional. Hence, there is the caveat that, when positing post hoc explanations, there may be the tendency to support the initial conceptualization.

When looking at the two more and less structured ToM tasks used in this study, it seems that kindergarteners' social skills either required similar abilities as was required for the unstructured ToM task, or they were unrelated to ToM performance.

Unexpectedly, when examining the proposed function of the more structured ToM task, it did not consistently relate to social skills items that could be classified as conventional. Instead, a pattern emerged where social skills identified as more conventional were consistently unrelated to both ToM tasks. As noted before, this same pattern was found by Lalonde and Chandler (1995) where 3-year old's success on FB tasks related only to intentional and not conventional social skills. In fact, with regards to teacher ratings, the structured task ToM did not provide any unique information as only 1 social skills item related uniquely to that measure. The remaining 9 items that related to the more structured ToM task also related to the less structured task. Therefore, in this sample and age group, it was the less structured ToM task that may have tapped into the ToM ability and intentional social skills illustrated by Lalonde and Chandler in their sample of 3-year-olds.

Despite these seemingly clear findings for the relations between teacher-rated social skills and ToM, the divide between intentional and conventional items may not be the only relevant distinction when considering the items that did not relate to ToM. Instead, some social skills items were either likely beyond the ability level of this age group, described behaviors that may not be linearly related to socially competent behavior, or involved behaviors that may often be inappropriate, depending on the timing

and context. These findings highlight the importance of choosing and wording social skills rating scale items in a way that consistently (and linearly) relate to socially adaptive behavior.

Patterns with parent-rated social skills. Parent-rated total social skills related only to the less structured and not the more structured measure of ToM. Furthermore, only three social skills subscales related to the unstructured task: Cooperation, Responsibility, and Self-Control. These results are somewhat similar than those of Weimer and Guarjardo (2005) who found that only teacher (and not parent) ratings of 3 - 5- year olds' SC significantly correlated with standard FB task scores. Of course, these authors only examined SC total scales and not subscales. In the current study, patterns of relations between types of social skills could not be discerned as none of the subscales contained at least two significant relations with a ToM task. This lack of relations could be explained by the way in which parents judge their children's behavior, which may involve factors other than expressive language ability and rule following. At the kindergarten age, parents are perhaps more attuned to their child's intention and how they relate to members within the family. Hence, the distinction between conventional and intentional behaviors may only be relevant outside the home environment. The only two studies that have examined the nature of conventional and intentional social skills prior to this one only examined social skills as rated by teachers (Lalonde & Chandler, Annotti & Teglassi, 2017). Therefore, this study is the first to bring forth the question whether the conceptualization of conventional and intentional social skills can be extended to parent raters. Future studies should address this question in greater detail. In addition, the

reasons for the low number of significant correlations between parent-rated social skills and two different ToM tasks remain unclear and should be further researched.

Overall conclusions with respect to the research question. The research question was addressed separately for parent and teacher informants. With teacher informants, some patterns of correlations supported the proposed links between ToM and social skills. Specifically, intentional social skills related to less structured ToM, but conventional social skills were unrelated to ToM (and not related to structured ToM as was expected). Given the dearth of significant correlations between parent-rated social skills and the ToM measures, few meaningful comparisons between patterns of relations among scale items could be made. In an attempt to make sense of these within informant discrepancies, the next section of this discussion deals exclusively with discrepancy issues.

Informant Discrepancies

Some of the most striking findings of this study involve the discrepancies between the two informants (teachers and parents), both when directly comparing social skills ratings, and also when separately examining correlations of those ratings to theoretically related constructs. When directly comparing the raters in this sample, teacher- and parent-rated total social skills did not correlate significantly ($r = .153, p = .08$). This shared variance is much smaller than the overlap between teacher and parent ratings indicated by the scale authors ($r = .30$; Gresham et al., 2010). However, these results are not that surprising as inconsistencies among independent sources of measurement about similar and other psychological constructs have been documented widely (e.g. Achenbach, McConaughy, & Howell, 1987; Renk & Phares, 2004; Toplak et al., 2013). To illustrate,

Renk and Phares' (2004) conducted a meta-analysis that yielded a mean weighted effect size of .36 for teacher and parent correspondences on children's social competence rating scales across 14 studies. The agreement between 55 other informant pairs (including teacher, self, peer, parent, mother, and father) ranged from .22 to .66. Such discrepancies are no longer attributed to measurement error or informant bias. Instead, they are said to reflect meaningful information about informant interpretations and perspectives on behavior, as well as the contexts within which informants observe and report the behavior (De Los Reyes, Thomas, Goodman, & Kunder, 2013). One explanation for such discrepancies is trait relevance, which refers to the idea that children change their behavior to function in settings with different requirements, thus behavior traits that are more relevant in a situation are more available for observation, will more likely be noticed, and would therefore be available for recall (Funder, 1995). Home and school settings differ in norms for behavior expression (Allan & Gilbert, 2002), therefore children may adjust their behavior in each setting to react adaptively.

However, the fact that parent and teacher ratings of social skills related so differently to the theoretically related construct of ToM was surprising. Despite the well documented phenomenon of informant discrepancy when directly examining a construct (e.g. social skills), there was little reason to expect that parent and teacher ratings of children's social skills would differ so drastically in how they relate to ToM ability. However, this study was not entirely unique: One other study was identified that found similar results where only teacher (and not parent) ratings of typically developing 3 - 5 year olds' SC significantly correlated with standard FB task scores (Weimer and Guarjardo, 2005). The authors reasoned that teachers may partially form judgments about

a child by comparing that child with the entire class, whereas parents may not necessarily measure their child's behavior by social comparison. They added that teachers' social skills ratings might better reflect how children interact within groups of peers given teachers' frequent opportunities to observe these interactions.

Another explanation for the discrepancies in how parent- and teacher-rated social skills relate to measures of ToM may be that the same social skills items function or mean something very different at home and school, with one providing more clear response expectations than another. For example, "joins an activity that has already started" may provide less clear expectations and be more effortful at school where there are many stakeholders with different needs than at home where the child may be accepted and able to join the group without much intention. In addition, the basis for judgments of raters likely vary, where parents may focus on their relationships with the child and teachers may focus on the children's interactions in the classroom (Teglasi et al., 2017).

The Role of Language

A general point of interest in this study was whether the relations between social skills and ToM performance tasks would change when controlling for language ability (using a vocabulary test as a proxy) and this question was tested separately for each informant. The question of whether to control for language in social skills research is controversial as one might argue that language ability is inextricable from at least some types of social skills. One of the clearest patterns observed in this study was the clear contrast between language association with teacher-rated social skills and lack thereof with parent-rated social skills. Whereas vocabulary was positively and significantly correlated with the teacher-rated social skills total scale and all but one of the subscales

(Self-control), there were no significant relations between vocabulary and any of the parent-rated social skills total or subscales. On an item level, vocabulary was significantly and positively correlated with 63% of teacher-rated items, and with 0.02% of parent-rated items. This pattern seems to match previous findings of relations between young children's receptive vocabulary and teacher ratings of SC (e.g. Longoria, Page, Hubbs-Tait, & Kennison, 2009; Gallagher, 1993; Connell & Prince, 2002). Interestingly, findings on parent rated social skills and language influence is both limited and inconsistent. Of the identified studies that examined parent-rated social skills and language of typically developing young children, some found significant positive relations (e.g. Bierman et al., 2008; Barnett, Gustafsson, Deng, Mills-Koonce, & Cox, 2012), whereas others were non-significant (Lengua, Honorado, & Bush, 2007; Hindman & Morrison, 2012). These discrepant findings warrant further research into the interdependencies of social skills and language, and how they might function differently in the home and school environment. Above and beyond response expectations and trait relevance, these results provide insight into the different ways in which parents and teachers make judgements about social competence. Clearly, such judgements are much more grounded in language competence for teachers than for parents.

When examining the effects of language on the ToM measures and their relations to social skills ratings with teacher informants, more patterns emerged. While vocabulary positively related to both the more structured ($r = .381$) and less structured ($r = .364$) tasks, its impact on the relation between these two ToM tasks and teacher-rated social skills was quite different. When controlling for language, the relations between social skills and performance on the structured ToM task were greatly reduced on the total

scale, subscale, and item level: The total scale and three subscales became nonsignificant (leaving only one significant relation with the Cooperation subscale) and the number of significant item correlations was reduced from 12 to 5. In contrast, all relations between teacher-rated social skills total and subscales and the unstructured ToM remained significant when controlling for vocabulary. On the item level, 12 out of the previous 29 correlations remained significant. The Cooperation, Responsibility, and Self-Control scales were least affected by vocabulary. Some of the subscales and items that remained strongly associated with the less structured ToM task appeared to describe some of the most intentional behaviors on the scale. For example, except for items on the Communication subscale, all social skills items containing the words “appropriately,” “well,” or “responsibility” remained related to the less structured ToM task when controlling for vocabulary. These words imply the need for judgement and acting with intention. It makes sense that this did not hold up for the Communication items, as they require language to enact. Overall, these findings beg the question, if language is so important for both social skills as ToM, why did it greatly reduce relations with the more structured task and not the less structured one? This is likely due to the overlap in what is required to perform each task. In other words, much of the variance in teacher-rated social skills and the more structured ToM task overlaps with language ability, whereas more of the variance shared with the less structured task does not. This makes sense as the nature and response expectations of the more structured ToM and vocabulary tasks are similarly explicit, compared to the less clear response expectations of the storytelling (less structured) ToM task.

Larger Implications of the Study

The findings of this study hold several implications for constructing, using, and interpreting social skills rating scales when using multiple informants. First, it supports the idea proposed by Verron & Teglassi (2018) that compositing scores across informants may obscure context-specific patterns of relations between theoretically related constructs. Whereas their study examined children's temperament, social competence, and emotion understanding, the same principles hold true for this study. Even when considering the results of a social skills scale-rated by one type of rater, the specific social skills items carry conceptual baggage that need to be considered when using and constructing measures. Whereas some items are not always linearly related to socially competent behaviors, others may be more or less complex, depending on the related response expectations. This "conceptual baggage" can become apparent when examining social skills items in terms of how they relate to theoretically related constructs such as ToM in different contexts such as home and school. In fact, doing so while also factoring in the situational response expectations of both social skills and ToM tasks can shed light on the nature of social skills as relatively more conventional or intentional. When considering these factors, it challenges the widely accepted idea that parallel parent and teacher-rated scales are measuring the same construct in the same way. Instead, the findings of this study suggest that the exact same words, when interpreted in reference to behaviors occurring in different contexts, mean very different things to the raters. This idea is further illustrated by the strikingly different relations in children's language ability and parents and teachers' ratings of their social competence. Based on these findings, a more useful way of approaching social skills scale construction may be to group social

skills items together based on how they relate to external criteria such as ToM performance.

When considering these conclusions, it brings into question whether social competence is the same concept for parents and teachers. The findings of this study illustrated how specific social skills as rated by different informants may differ in their relations with ToM, despite the fact that ToM is widely regarded as a building block for social competence (e.g. Cassidy et al., 2003; Watson et al., 1999). More specifically, the patterns of relations seem evident for one informant (teacher) but not the other (parent). One explanation may be that different contexts pull for different behaviors (e.g. De Los Reyes, 2011). In fact, the findings of this study highlighted some reasons as to what exactly it is about the context that might be fueling these differences in potential behaviors exhibited and how they are judged by raters. Specifically, the study findings illustrate that certain situations may pull for social skills that either do or do not require an understanding of other's mental states (ToM) as well as social causality. As proposed by Lalonde and Chandler (1995) and Annotti and Teglassi (2017), it is the relatively more or less clear response expectations of the situation that pulls for more conventional or intentional types of SC, respectively. As schools generally provide a lot more structure than typical home environments, it may be that the construct of conventional SC only applies to school (and similarly structured) contexts, whereas intentional SC is required in unclear situations across contexts. Therefore, future research needs to further examine the construct of SC in order to determine whether it is universal or not. When putting the findings in the context of Rose-Krasnor's (1997) Social Competence Prism described in the introduction of this study, it is possible that SC may still be conceptualized as

“effectiveness in social interactions” on the broadest, theoretical level of its definition. However, the bottom two levels of the prism bring in the factors of judgement and context appropriate outcomes (Index level) as well as specific skills and goals that motivate social behavior (Skills level). Given the results of this study, it seems that more specific conceptualizations of socially competent behavior may differ in terms of what is prioritized and judged as adaptive across different contexts and by different observers.

Limitations and Future Directions

A large limitation of this study is its exploratory and correlational nature. In order to identify patterns and classify social skills as intentional or conventional, two raters separately examined the correlational patterns by applying the criteria for conventional and intentional social skills post hoc. Therefore, there is a great risk of bias to support the original conceptualization. Future studies may use other methods such as factor analyses to conceptualize differences between social skills items.

In addition, the specific SSiS rating scale used in this study included some items that were beyond the expected social skills abilities of kindergarteners or did not lend themselves linearly to the concept of social competence. Several of the items on the Empathy scale also described affective rather than cognitive empathy, yet the scale itself did not differentiate between them. Given these limitations of the scale within the context of the study’s particular age group and research questions, future studies can examine whether and how patterns of relations between different social skills and ToM tasks exist when using a range of social skills rating scales.

Finally, an important finding of this study was that social skills and ToM tasks related differently within this sample of 5-6-year-olds when compared to Lalonde and

Chandler's (1995) sample of 3-year-olds. More specifically, performance on more structured ToM tasks related to 3-year-olds' but not 5-6-year-olds' intentional social skills. Instead, results of this study found that 5-6-year-olds' performance on a less structured ToM task related to intentional social skills. Given that these relations, and presumably ToM skills and social skills expectations, change with age, future studies should examine how these relations change or hold up for older groups of children.

Appendix: Tables

Table 1. Measures and corresponding constructs

Measure	Types of Scores	Construct Examined
SSiS Social Skills Rating Scale – Parent and Teacher	Social skills total: age based standard scores Social skills subscales: raw scores Item scores: 4-point Likert scale (“Never,” “Sometimes,” Often,” “Always”) raw scores	Conventional and intentional social skills
NEPSY-II ToM Subtest	Age based standardized scaled score	ToM as it functions under clear response expectations
TAT	Mean score of Abstraction and Perceptual Integration ranging from 1-4.5	ToM as it functions under unclear response expectations

Table 2. Descriptive data

Variable	<i>N</i>	<i>Range</i>	<i>M</i>	<i>SD</i>
Age in Months	97	60 – 83	69.82	4.80
Vocabulary	97	5-16	11.80	2.48
Affect Recognition	96	5-16	10.63	2.58
More structured ToM Score	97	2 -15	10.61	2.59
TAT total EU	97	1-3.84	2.51	.67
Teacher-Rated Social Skills				
Social Skills Total Score	93	70-130	100.45	13.81
Communication	95	6-21	15.68	3.34
Cooperation	95	4-18	12.53	3.68
Assertiveness	95	0-21	12.85	3.78
Responsibility	95	5-18	12.84	3.28
Empathy	95	4-18	12.21	3.28
Engagement	95	5-21	15.31	3.29
Self-Control	95	2-21	13.87	3.82
Parent-Rated Social Skills				
Social Skills Total Score	80	59-128	96.60	13.16
Communication	80	9-21	16.03	2.81
Cooperation	80	6-18	12.70	2.71
Assertiveness	80	6-20	14.53	2.95
Responsibility	80	3-18	11.94	2.83
Empathy	80	3-18	12.83	3.34
Engagement	80	7-21	14.93	3.13
Self-Control	80	3-18	11.15	3.21

Table 3. Student frequency by teacher and school

School	Teacher	Student(s)
A	A1	15
	A2	7
	A3	3
		N = 25
B	B1	9
	B2	4
	B3	5
	B4	3
		N = 21
C	C1	5
	C2	6
	C3	3
	C4	3
		N = 17
D	D1	1
	D2	1
	D3	1
	D4	1
	D5	1
		N = 5
E	E1	1
		N = 1
F	F1	1
		N = 1
G	G1	2
		N = 2
H	H1	3
	H2	2
		N = 5
I	I1	7
		N = 7
J	J1	4
	J2	3
	J3	6
		N = 13

Table 4. Comparisons between study sample and norm group performance on the SSiS Teacher Rating Scale

Variable	N	Sample Range	Sample M	Normed M	t	Sample SD	Normed SD	F
Social Skills Total	93	70-130	100.45	94.7	$t_{(643)} = 2.46$ $p < .01$	13.81	22	$F_{(549,92)} = 2.54$, $p < .001$
Communication	95	6-21	15.68	15.8	$t_{(643)} = 0.29$, $p = .77$	3.34	3.8	$F_{(549,94)} = 1.19$, $p > .05(0.29)$
Cooperation	95	4-18	12.53	12.7	$t_{(643)} = 0.41$, $p = .68$	3.68	3.7	$F_{(549,94)} = 1.01$, $p > .05(0.98)$
Assertiveness	95	0-21	12.85	12.3	$t_{(643)} = 1.22$, $p = .22$	3.78	4.1	$F_{(549,94)} = 1.18$, $p > .05(0.33)$
Responsibility	95	5-18	12.84	13.2	$t_{(643)} = 0.89$, $p = .37$	3.28	3.7	$F_{(549,94)} = 1.27$, $p = 0.15$
Empathy	95	4-18	12.21	12.4	$t_{(643)} = 0.46$, $p = .65$	3.28	3.8	$F_{(549,94)} = 1.34$, $p = 0.08$
Engagement	95	5-21	15.31	14.4	$t_{(643)} = 2.30$, $p = .02$	3.29	3.6	$F_{(549,94)} = 1.20$, $p = 0.29$
Self-Control	95	2-21	13.87	14.0	$t_{(643)} = 0.28$, $p = .79$	3.82	4.4	$F_{(549,94)} = 1.33$, $p = 0.09$

Table 5. Comparisons between study sample and norm group performance on the SSiS Parent Rating Scale

Variable	N	Sample Range	Sample M	Normed M	t	Sample SD	Normed SD	F
Social Skills Total	80	59-128	96.60	98.4	$t_{(2078)} = 0.88, p=0.38$	13.16	18.1	$F_{(1999,79)} = 1.89, p<.001$
Communication	80	9-21	16.03	16.0	$t_{(2078)} = 0.09, p=.93$	2.81	3.0	$F_{(1999,79)} = 1.14, p=0.46$
Cooperation	80	6-18	12.70	13.2	$t_{(2078)} = 1.52, p=.13$	2.71	2.9	$F_{(1999,79)} = 1.15, p=0.44$
Assertiveness	80	6-20	14.53	15.1	$t_{(2078)} = 1.52, p=.13$	2.95	3.3	$F_{(1999,79)} = 1.25, p=0.20$
Responsibility	80	3-18	11.94	13.1	$t_{(2078)} = 3.29, p<.01$	2.83	3.1	$F_{(1999,79)} = 1.20, p=0.30$
Empathy	80	3-18	12.83	13.4	$t_{(2078)} = 1.56, p=.12$	3.34	3.2	$F_{(1999,79)} = 1.09, p=0.56$
Engagement	80	7-21	14.93	15.3	$t_{(2078)} = 0.93, p=.35$	3.13	3.5	$F_{(1999,79)} = 1.25, p=0.20$
Self-Control	80	3-18	11.15	12.2	$t_{(2078)} = 2.44, p=.01$	3.21	3.8	$F_{(1999,79)} = 1.40, p=0.05$

Table 6. Paired sample t-test comparing teacher- and parent-rated social skills total scale and subscales

Variable	M	SD	t	df	Sig. (2 – tailed)
Social Skills Total	-5.33	17.59	-2.68	77	.009
Communication	.026	3.92	.058	77	.954
Cooperation	.038	4.38	.078	77	.938
Assertiveness	-1.14	4.42	-2.28	77	.025
Responsibility	1.18	3.93	2.65	77	.010
Empathy	-.33	4.27	-.69	77	.493
Engagement	.83	4.55	1.62	77	.110
Self-Control	2.73	4.67	5.16	77	.000

Table 7. Pearson and Spearman correlations between scale-level variables

	Gender	Age	Vocabulary	More structured ToM	Less structured ToM	Teacher Rated Social Skills	Parent Rated Social Skills
Gender		-.009	.024 (N=97)	.175 (N=97)	.059 (N=97)	.293** (N=93)	-.090 (N=80)
Age			-.039 (N=97)	.170 (N=97)	.381** (N=97)	.193 (N=93)	.021 (N=80)
Vocabulary				.361** (N=97)	.328** (N=97)	.364** (N=93)	.053 (N=80)
More structured ToM					.383** (N=97)	.259* (N=93)	.067 (N=80)
Less structured ToM						.425** (N=93)	.236* (N=80)
Teacher Rated Social Skills							.153 (N=78)

Note. Correlations that include Gender are Spearman correlations, all others are Pearson correlations.

* $p < .05$; ** $p < .01$

Table 8. Pearson and Spearman correlations between scale-level and teacher-rated social skills subscale-level variables

	Communication	Cooperation	Assertion	Responsibility	Empathy	Engagement	Self-Control
Gender	.280**	.321**	.025	.328**	.242*	.092	.248*
Age	.172	.131	.176	.157	.084	.213	.160
Vocabulary	.339**	.320**	.358**	.375**	.293**	.250*	.158
More structured ToM	.166	.308**	.229*	.239	.206*	.182	.108
Less structured ToM	.334**	.395**	.330**	.412**	.308**	.300**	.303**

* $p < .05$; ** $p < .01$

Table 9. Pearson and Spearman correlations between scale-level and parent-rated social skills subscale-level variables

	Communi cation	Cooperat ion	Assertion	Responsi bility	Empathy	Engage ment	Self- control
Gender	-.150	-.096	.051	.029	.042	-.116	-.183
Age	-.064	-.046	-.025	-.047	.087	.155	.010
Vocabulary	.158	.064	.079	.130	-.005	-.053	-.038
More structured ToM	.028	.043	-.069	.136	.074	.004	.105
Less structured ToM	.173	.242*	.021	.238*	.157	.109	.285*

* $p < .05$; ** $p < .01$

Table 10. Pearson correlations between parent- and teacher-rated social skills total scores, subscales, and items with vocabulary

Social Skills Scales and Items	Parent (N=80)	Teacher (N=95)
Total Score	.053	.364**
Communication	.158	.339**
Says "thank you"	.161	.105
Takes turns in conversations	.139	.269**
Speaks in appropriate tone of voice	-.093	.420**
Uses gestures or body appropriately with others	.041	.244*
Says "please"	.167	.123
Responds well when others start a conversation or activity	.061	.291**
Makes eye contact when talking	.200	.332**
Cooperation	.064	.320**
Follows your directions	-.012	.260*
Completes tasks without bothering others	-.042	.320**
Pays attention to your instructions	.121	.326**
Parent: Follows household rules	.050	.290**
Teacher: Follows classroom rules		
Parent: Works well with family members	-.024	
Teacher: Participates appropriately in class		.345**
Parent: Follows rules when playing games with others	.227*	
Teacher: Ignores classmates when they are distracting		.194
Assertion	.079	.358**
Asks for help from adults	.054	.023
Questions rules that may be unfair	.052	.236*
Stands up for herself/himself when treated unfairly	-.150	.133
Says when there is a problem	.059	.367**
Expresses feelings when wronged	.078	.286**
Stands up for others who are treated unfairly	.124	.119
Says nice things about herself/himself without bragging	.167	.199
Responsibility	.130	.375**
Is well-behaved when unsupervised	.105	.358**
Takes responsibility for her/his own actions	.032	.350**
Respects the property of others	.142	.325**
Takes care when using other people's things	.209	.227*
Parent: Does what she/he promised	.080	
Teacher: Acts responsibly when with others		.332**
Parent: Takes responsibility for his or her own mistakes	-.047	
Teacher: Takes responsibility for part of a group activity		.334**
Empathy	-.005	.293**
Tries to comfort others	-.020	.294**
Forgives others	.100	.187
Shows concern for others	.123	.178
Parent: Tries to understand how you feel	-.072	
Teacher: Feels bad when others are sad		.250*
Parent: Tries to make others feel better	.128	
Teacher: Shows kindness to others when they are upset		.252*
Parent: Tries to understand how others feel	-.084	
Teacher: Is nice to others when they are feeling bad		.176
Engagement	-.053	.250*

Makes friends easily	-.105	.121
Interacts well with other children	.004	.235*
Joins activities that have already started	-.197	.221*
Invites others to join in activities	.001	.194
Starts conversations with peers	.072	.115
Introduces himself/herself to others	-.069	.203*
Parent: Starts conversations with adults	-.029	
Teacher: Participates in games or group activities		.155
Self-Control	-.038	.146
Stays calm when teased	-.097	.112
Takes criticism without getting upset	-0.56	-.036
Resolves disagreements with you calmly	-.030	.229*
Responds appropriately when pushed or hit	-.016	.269**
Makes a compromise during a conflict	.112	.293**
Stays calm when disagreeing with others	-.056	.255*
Parent: Tolerates peers when they are annoying	0.61	
Teacher: Uses appropriate language when upset		.203

* $p < .05$; ** $p < .01$

Table 11. Parent and Teacher SSiS subscale correlations

	T.Commu nication	T.Coop eration	T.Asser tion	T.Respon sibility	T. Empathy	T.Engage ment	T. Self- control
P.Communi cation	.171	.064	.161	.085	.159	.130	.181
P.Cooperat ion		.073	.121	.139	.172	.107	.179
P. Assertion			.055	.114	.200	.169	.108
P.Responsi bility				.20	.237*	.092	.232*
P. Empathy					.164	-.073	.079
P.Engage ment						-.043	.082
P. Self- control							.194

* $p < .05$

Table 12. Bivariate correlations between teacher- and parent-rated social skills and ToM performance

Social Skills Subscales and Items	Teacher Ratings		Parent Ratings	
	More structured	Less structured	More structured	Less structured
	ToM	ToM	ToM	ToM
Communication (Teacher N = 95 – 96; Parent N = 79 – 80)	.166	.334**	.028	.173
Says “thank you”	.060	.083	-.008	.145
Takes turns in conversations	.243*	.268**	.056	.035
Speaks in appropriate tone of voice	.230*	.329**	0.45	.017
Uses gestures or body appropriately with others	.212*	.299**	-.110	.084
Says “please”	-.015	.158	-.058	.133
Responds well when others start a conversation or activity	.288**	.255*	.085	.219
Makes eye contact when talking	.186	.226*	.123	.140
Cooperation (Teacher N = 95 – 96; Parent N = 80)	.308**	.396**	.043	.242
Follows your directions	.415**	.358**	.142	.116
Completes tasks without bothering others	.330**	.406**	.030	.226*
Pays attention to your instructions	.381**	.382**	.136	.256*
Follows classroom/ household rules	.196	.203	-.015	.149
Participates appropriately in class	.401**	.390**		
Ignores classmates when they are distracting	.185	.252*		
Works well with family members			-.011	.154
Follows rules when playing games with others			-.007	.185
Assertion (Teacher N = 95 – 96; Parent N = 78 - 80)	.229*	.330**	-.069	.021
Asks for help from adults	.035	.103	-.027	-.028
Questions rules that may be unfair	.014	.158	-.108	.056
Stands up for herself/himself when treated unfairly	.171	.207*	-.040	.141
Says when there is a problem	.249*	.265**	-.084	-.080
Expresses feelings when wronged	.309**	.285**	-.015	.041
Stands up for others who are treated unfairly	.128	.207*	.035	.141
Says nice things about herself/himself without bragging	.260*	.327**	.123	.193

Responsibility (Teacher N = 93 – 96; Parent N = 79 - 80)	.239*	.412**	.136	.238*
Is well-behaved when unsupervised	.292**	.296**	.160	.248*
Takes responsibility for her/his own actions	.308**	.402**	.179	.102
Respects the property of others	.072	.267**	.130	.100
Takes care when using other people's things	.104	.270**	.130	.223*
Acts responsibly when with others	.201	.348**		
Takes responsibility for part of a group activity	.227*	.355**		
Does what she/he promised			-.103	.225*
Takes responsibility for his or her own mistakes			.124	.178
Empathy (Teacher N = 96; Parent N = 79 - 80)	.206*	.308**	.074	.157
Tries to comfort others	.161	.165	.123	.134
Forgives others	.214*	.349**	-.006	.156
Shows concern for others	.238*	.278**	.170	.098
Feels bad when others are sad	.093	.204*		
Shows kindness to others when they are upset	.163	.165		
Is nice to others when they are feeling bad	.112	.244*		
Tries to understand how you feel			-.053	.126
Tries to make others feel better			.148	.271*
Tries to understand how others feel			.026	.093
Engagement (Teacher N = 92– 96; Parent N = 76 - 80)	.182	.300**	.004	.109
Makes friends easily	.211*	.162	.066	.138
Interacts well with other children	.223*	.348**	.083	.106
Joins activities that have already started	.149	.293**	-.069	.003
Invites others to join in activities	.220*	.286**	.140	.145
Starts conversations with peers	.322**	.183	-.009	.190
Introduces himself/herself to others	.230*	.211*	-.018	.051
Participates in games or group activities	.186	.262*		
Starts conversations with adults			-.136	-.141
Self-control (Teacher N = 91 – 93; Parent N = 75 - 77)	.108	.303**	.105	.285**
Stays calm when teased	-.042	.204*	-.028	.135
Takes criticism without getting upset	.027	.075	.011	.230*
Resolves disagreements with you calmly	.163	.256*	.122	.341**
Responds appropriately when pushed or hit	.150	.345**	-.085	.101
Makes a compromise during a conflict	.289**	.305**	.118	.212
Stays calm when disagreeing with others	.207	.307**	.211	.183
Uses appropriate language when upset	.112	.308**		
Tolerates peers when they are annoying			.193	.185

Table 13. Z-tests between parent rated social skills subscale correlations with more and less structured ToM tasks

Scale/ Subscale	N	z	Sig.
Total Social Skills	80	1.072	.28
Communication	79	0.094	.37
Cooperation	80	1.253	.21
Assertion	79	0.296	.77
Responsibility	79	0.647	.52
Empathy	79	0.517	.60
Engagement	77	0.641	.52
Self-control	76	1.126	.26

Table 14. Bivariate and partial correlations (controlling for vocabulary) between teacher-rated social skills and ToM performance

Social Skills Subscales and Items	Bivariate Correlations		Partial Correlations	
	More structured	Less Structured	More structured	Less Structured
	ToM	ToM	ToM	ToM
Communication (N = 95 – 96)	.166	.334**	.050	.251*
Says “thank you”	.060	.083	.014	.052
Takes turns in conversations	.243*	.268**	.140	.197
Speaks in appropriate tone of voice	.230*	.329**	.089	.223*
Uses gestures or body appropriately with others	.212*	.299**	.108	.239*
Says “please”	-.015	.158	-.077	.126
Responds well when others start a conversation or activity	.288**	.255*	.227*	.176
Makes eye contact when talking	.186	.226*	.075	.131
Cooperation (N = 95 – 96)	.308**	.396**	.218*	.325**
Follows your directions	.415**	.358**	.361**	.299**
Completes tasks without bothering others	.330**	.406**	.224*	.337**
Pays attention to your instructions	.381**	.382**	.313**	.308**
Follows classroom rules	.196	.203	.096	.119
Participates appropriately in class	.401**	.390**	.324**	.312**
Ignores classmates when they are distracting	.185	.252*	.100	.204*
Assertion (N = 96 – 96)	.229*	.330**	.115	.241*
Asks for help from adults	.035	.103	.040	.102
Questions rules that may be unfair	.014	.158	-.061	.088
Stands up for herself/himself when treated unfairly	.171	.207*	.156	.179
Says when there is a problem	.249*	.265**	.141	.165
Expresses feelings when wronged	.309**	.285**	.248*	.211*
Stands up for others who are treated unfairly	.128	.207*	.093	.179
Says nice things about herself/himself without bragging	.260*	.327**	.233*	.282**
Responsibility (N = 93 – 96)	.239*	.412**	.120	.330**
Is well-behaved when unsupervised	.292**	.296**	.172	.202
Takes responsibility for her/his own actions	.308**	.402**	.232*	.325**
Respects the property of others	.072	.267**	-.071	.179
Takes care when using other people’s things	.104	.270**	-.007	.212*
Acts responsibly when with others	.201	.348**	.079	.268**
Takes responsibility for part of a group activity	.227*	.355**	.145	.276**

Empathy (N = 95 – 96)	.206*	.308**	.112	.239*
Tries to comfort others	.161	.165	.069	.076
Forgives others	.214*	.349**	.159	.310**
Shows concern for others	.238*	.278**	.187	.237*
Feels bad when others are sad	.093	.204*	.014	.134
Shows kindness to others when they are upset	.163	.165	.087	.091
Is nice to others when they are feeling bad	.112	.244*	.058	.200
Engagement (N = 92 – 96)	.182	.300**	.102	.239*
Makes friends easily	.211*	.162	.191	.130
Interacts well with other children	.223*	.348**	.138	.295**
Joins activities that have already started	.149	.293**	.115	.239*
Invites others to join in activities	.220*	.286**	.185	.240*
Starts conversations with peers	.322**	.183	.327**	.155
Introduces himself/herself to others	.230*	.211*	.184	.156
Participates in games or group activities	.186	.262*	.146	.226*
Self-Control (N = 91 – 93)	.108	.303**	.060	.273*
Stays calm when teased	-.042	.204*	-.105	.178
Takes criticism without getting upset	.027	.075	.055	.091
Resolves disagreements with you calmly	.163	.256*	.067	.197
Responds appropriately when pushed or hit	.150	.345**	.049	.282**
Makes a compromise during a conflict	.289**	.305**	.213*	.231*
Stays calm when disagreeing with others	.207	.307**	.113	.244*
Uses appropriate language when upset	.112	.308**	.046	.261*

* $p < .05$; ** $p < .01$

Table 15. Bivariate and partial correlations (controlling for vocabulary) between parent-rated social skills and ToM performance

Social Skills Subscales and Items	Bivariate Correlations		Partial Correlations	
	More Structured ToM	Less Structured ToM	More structured ToM	Less Structured ToM
Communication (N = 79 – 80)	.028	.173	-.032	.124
Says “thank you”	-.008	.145	-.074	.099
Takes turns in conversations	.056	.035	.011	-.012
Speaks in appropriate tone of voice	0.45	.017	.120	.051
Uses gestures or body appropriately with others	-.110	.084	-.122	.074
Says “please”	-.058	.133	-.139	.099
Responds well when others start a conversation or activity	.085	.219	.084	.211
Makes eye contact when talking	.123	.140	-.025	.080
Cooperation (N = 80)	.043	.242*	.021	.236*
Follows your directions	.142	.116	.147	.127
Completes tasks without bothering others	.030	.226*	.010	.254*
Pays attention to your instructions	.136	.256*	.112	.230*
Follows household rules	-.015	.149	-.037	.140
Works well with family members	-.011	.154	-.028	.172
Follows rules when playing games with others	-.007	.185	-.072	-.055
Assertion (N = 78 – 80)	-.069	.021	-.105	-.010
Asks for help from adults	-.027	-.028	-.034	-.049
Questions rules that may be unfair	-.108	.056	-.114	.041
Stands up for herself/himself when treated unfairly	-.040	.141	.000	.107
Says when there is a problem	-.084	-.080	-.125	-.106
Expresses feelings when wronged	-.015	.041	-.113	.017
Stands up for others who are treated unfairly	.035	.141	-.020	.107
Says nice things about herself/himself without bragging	.123	.193	.079	.148

Responsibility (N = 79 – 80)	.136	.238*	.097	.206
Is well-behaved when unsupervised	.160	.248*	.187	.227*
Takes responsibility for her/his own actions	.179	.102	.201	.096
Respects the property of others	.130	.100	.049	.057
Takes care when using other people's things	.130	.223*	.076	.167
Does what she/he promised	-.103	.225*	-.199	.211
Takes responsibility for his or her own mistakes	.124	.178	.152	.206
Empathy (N = 79 – 80)	.074	.157	.081	.172
Tries to comfort others	.123	.134	.147	.148
Forgives others	-.006	.156	-.021	.131
Shows concern for others	.170	.098	.149	.062
Tries to understand how you feel	-.053	.126	-.015	.159
Tries to make others feel better	.148	.271*	.123	.245*
Tries to understand how others feel	.026	.093	.060	.128
Engagement (N = 77 – 80)	.004	.109	.024	.139
Makes friends easily	.066	.138	.117	.184
Interacts well with other children	.083	.106	.074	.111
Joins activities that have already started	-.069	.003	-.030	.073
Invites others to join in activities	.140	.145	.168	.153
Starts conversations with peers	-.009	.190	-.043	.176
Introduces himself/herself to others	-.018	.051	.028	.078
Starts conversations with adults	-.136	-.141	-.160	-.139
Self-control (N = 75 – 77)	.105	.285**	.127	.323**
Stays calm when teased	-.028	.135	.044	.177
Takes criticism without getting upset	.011	.230*	.032	.263*
Resolves disagreements with you calmly	.122	.341**	.100	.372**
Responds appropriately when pushed or hit	-.085	.101	-.103	.112
Makes a compromise during a conflict	.118	.212	.051	.187
Stays calm when disagreeing with others	.211	.183	.262*	.213
Tolerates peers when they are annoying	.193	.185	.212	.175

Table 16. Classifications of teacher-rated social skills items as conventional or intentional

Conventional Social Skills	Intentional Social Skills
Communication	
Says "thank you" Says "please" Makes eye contact when talking	Takes turns in conversations Speaks in appropriate tone of voice Uses gestures or body appropriately with others Responds well when others start a conversation or activity
Cooperation	
Follows classroom rules	Follows your directions Completes tasks without bothering others Pays attention to your instructions Participates appropriately in class
Assertion	
	Says when there is a problem Expresses feelings when wronged Says nice things about herself/himself without bragging
Responsibility	
	Is well-behaved when unsupervised Takes responsibility for her/his own actions Respects the property of others Takes care when using other people's things Acts responsibly when with others Takes responsibility for part of a group activity
Empathy	
Feels bad when others are sad Shows kindness to others when they are upset Is nice to others when they are feeling bad	Forgives others Shows concern for others
Engagement	
	Interacts well with other children Joins activities that have already started Invites others to join in activities
Self-control	
Stays calm when teased Takes criticism without getting upset	Responds appropriately when pushed or hit Makes a compromise during a conflict Stays calm when disagreeing with others Uses appropriate language when upset Resolves disagreements with you calmly

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