The relationships among social cognition, peer acceptance, and social behavior in Israeli kindergarteners

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The present study investigated the relationships among Israeli kindergarten children's social cognitive capacities, their popularity, and their social behavior. We found that children's understanding of others' behavioral motives was positively related to their popularity, that children's false-belief understanding was positively related to peers' positive behavioral and teachers' prosocial evaluations of them, and that children's understanding of emotions was positively related to teachers' prosocial ratings but negatively related to both peers' negative behavioral and teachers' aggressiveness evaluations of them. Moreover, we found that Israeli kindergarten children value the same kinds of social behaviors in their peers as do children from other cultures. The findings substantiate the importance of assessing the implications of a variety of socio-cognitive capacities to the social functioning of young children from diverse cultures.

Research on school-aged children reveals that one of the major behavioral predictors of later maladjustment, psychopathology, substance abuse, and criminality is social acceptance in the peer group. Specifically, children disliked (rejected) by their peers are more likely than well-liked (popular) children to develop negative outcomes in all these arenas (Ladd & Price, 1987; Parker & Asher, 1987; Roff & Wirt, 1984). Given the relative stability of children's social status across the school-age period (Coie & Dodge, 1983; Newcomb & Bukowski, 1984), and even in the transition from kindergarten to elementary school (Coie & Dodge, 1983; Vitaro, Gagnon, & Tremblay, 1990), researchers have started to focus on the factors contributing to the emergence and stability of children's acceptance status (see Hay, Payne, & Chadwick, 2004, for a review).

Some accounts refer to inherent attributes of children that may remain relatively constant across these early years; for instance, both physical attractiveness and intelligence have been found positively related to peer acceptance (Dodge, 1983; Putallaz, 1983; Quay & Jarrett, 1984). Children's early home and daycare environment is also related to their social functioning in school (NICHD Early Child Care Research Network, 2003). Other accounts explain the emergence and stability of children's popularity status in terms of behavioral roles or patterns that children might adopt as a result of their early social interactions (Ladd, Price, & Hart, 1988; Mize & Ladd, 1988). The present study tackles yet an additional factor that may contribute to the emergence and stability of popularity status in preschoolers; namely, their socio-cognitive capacities.

A number of studies have addressed this factor by investigating the relationship between children's social-information processing capacities and their social acceptance or behavior. Specifically, in many of these studies children were provided with hypothetical scenarios describing interactions between peers, and their suggestions or solutions regarding possible problems within the interactions were coded. While some studies found only weak relations between social-problem solving skills and popularity amongst preschoolers (Mendelson, Aboud, & Lanthier, 1994; Putallatz, 1983), others revealed significant direct (Brochin & Wasik, 1992; Harrist, Zaia, Bates, Dodge, & Pettit, 1997) or mediational relations (Dodge et al., 2003). In general, the findings are that popular children are more likely than rejected children to propose other-oriented activities, such as information and attention-seeking behaviors, and to provide more effective solutions for managing conflicts, and for initiating and maintaining interactions.

Given these associations between popularity measures and interaction-specific measures of social cognition, researchers have started to entertain the possibility that preschool children's social functioning might be related to more abstract and general socio-cognitive capacities (see Hay et al., 2004; Hughes & Leekam, 2004, for reviews). In particular, the rationale underlying these studies is that popular children, or children who tend to act prosocially, are not only more likely to provide more effective solutions to social interaction conflicts, but might be in general more sensitive to others' states of mind. The presumption is that children who are better at recognizing their peers' feelings, intentions, and thoughts – e.g., children who have a more advanced theory-of-mind – might also be better at responding appropriately in social interactions, thus gaining their peers' liking. This presumption is particularly pertinent to kindergarten children because this is a period in which substantial developments in these areas of social cognition take place, thus opening the...
Following this reasoning, a number of recent studies have addressed the relationship between kindergarten children's understanding of others' minds and their popularity and social behavior. Most such studies have focused on one particular understanding, namely, children's capacity to attribute false beliefs to others. The attribution of false beliefs incurs an understanding that what people think (including oneself) is merely an interpretation of reality, and, thus, could be false. It further implies that people might have different thoughts on the same matter. The focus of researchers on this particular skill is thus justifiable both because of its presumed importance for adaptive social interactions and because of the centrality of this skill in the theory-of mind-literature (Wellman, Cross, & Watson, 2001). Findings from these studies reveal a somewhat mixed pattern. On the one hand, a number of these studies found a positive relation between children's false-belief understanding and their popularity, prosocial intentional behavior, low aggressive behavior, role playing skills, and morality (Astington & Jenkins, 1995; Cassidy, Werner, Rourke, Zubernis, & Balaraman, 2003; Lalonde & Chandler, 1995; Peterson & Siegel, 2002; Slaughter, Dennis, & Pritchard, 2002; Watson, Nixon, Wilson, & Capage, 1999). On the other hand, other studies find no substantial differences in the false-belief capacities of bullies or children with conduct problems, in comparison to other children (e.g., Badenes, Esteban, & Bacete, 2000; Happé & Frith, 1996). These latter findings have led some researchers to argue that certain aggressive children may have rather intact mindreading capacities, which help them manipulate and tease their peers (Happé & Frith, 1996; Sutton, Smith, & Swettenham, 1999a). An implication of these mixed findings is that there might be other socio-cognitive capacities that differentiate popular and prosocial children from rejected and aggressive ones.

One such socio-cognitive capacity is the understanding of emotions. As Astington (2001) noted, “the real-world consequences of children’s theory-of-mind development should be investigated, with attention paid to their understanding of both epistemic and motivational states” (p. 687, our emphasis). This recommendation should be upheld for at least two reasons. First, as Dunn (1995) argues, belief-related versus emotion-related understandings might be driven by somewhat separate underlying mechanisms. Second and related, as Wellman and Liu (2004) reported, there might be developmental differences regarding the age at which children achieve certain socio-cognitive skills. For instance, a basic understanding of emotions seems to precede understanding of false beliefs.

Very few studies investigating the relation between socio-cognitive skills and functioning have incorporated measures of understanding of emotions. Two notable exceptions are the studies by Dunn (e.g., 1995) and Cassidy et al. (2003). Dunn (1995), for instance, conducted a longitudinal investigation of the relationship between early emotional and belief understanding and children's later experiences in kindergarten. She found that while early belief understanding was related to later sensitivity to teachers’ criticisms, early emotional understanding was related to later positive evaluations of peers and morality. Cassidy et al. (2003) investigated the relationship between false-belief and emotional understanding, and peers’, teachers’, and observers’ ratings of social behavior. Interestingly, they found that while false-belief understanding was mostly related to peers’ likeability, emotional understanding was related to evaluations of prosocial behavior.

One of the main goals of the present study was to expand our understanding of the relationship between social cognition and social functioning in the kindergarten years by assessing a further variety of both socio-cognitive skills and measures of social functioning. As Hughes and Leekam (2004) concluded in their review of the literature on the relationship between understanding of minds and social relations, it is inappropriate and misinformative to attempt to assess this relationship by relying on single measures of either variable. To this end, in addition to standard false-belief measures, we also assessed children’s understanding of conflicting emotions, and their sensitivity to motives in judging others’ actions. Moreover, we assessed the relationship between these three distinctive socio-cognitive capacities to three independent measures of children's social functioning, namely, peers' sociometric ratings of popularity, peers' behavioral evaluations, and teachers' behavioral evaluations.

The measure of false-belief understanding used in the study is similar to one used in previous cross-linguistic studies (e.g., Shatz, Diesendruck, Martinez, & Akar, 2003). In one of the tasks, for instance, children are told a story about a character that holds a certain belief about the location of an object (e.g., that a box of juice is in the refrigerator), but the belief is false (e.g., the character’s brother took the juice to his room). Children are asked to predict where the character is going to look for the object: in the location where she falsely believes it is (e.g., the refrigerator), or where it actually is (e.g., the brother's room). Five-year-olds are much more likely than 3-year-olds to give the first response, presumably revealing their greater understanding that people’s behavior is determined by their mental representations of the world, rather than by how the world really is (Wellman et al., 2001).

The measure of emotional understanding was adapted to Hebrew from a task developed by Denham and her colleagues (Denham, McKinley, Couchoud, & Holt, 1990). In the crucial portion of the task, children are asked to decide how a character feels in a given situation, when the description of the character’s feelings points to a response that conflicts with how the parents reported the child typically feels. Thus, to “succeed” in this task, children have to overcome their own emotional tendencies, and take into account the character’s perspective. Indeed, Denham and colleagues found that success on this measure is related to likeability and emotional competence (Denham et al., 1990, 2003). Children’s sensitivity to motives in judging others’ actions was assessed via a measure developed by Heyman and Gelman (1998). In this measure, children are told stories involving a character (the agent) who does something to another character (the patient). In the crucial stories, the outcome of the agent’s action (i.e., positive or negative) contrasts with the agent’s intention (i.e., negative or positive). Children’s responses to a series of evaluative questions regarding the agent (e.g., “is he nice?”) indicate whether they base their evaluations on the agent’s motives or on the sheer outcome of his/her actions. Adequate interpretation of others’ intentions is a crucial socio-cognitive capacity, as illustrated by the finding that misinterpretation can often lead to aggression (see Persson, 2005; Schwartz et al., 1998). Thus, we believed that the addition of this construct (e.g., relative to the study by Cassidy et al., 2003) to an assessment of social cognition could provide important original information.
Our general hypothesis regarding the relationship between social cognition and social functioning was that children who have better socio-cognitive skills would also get better ratings of popularity and social behavior. Crucially, we believed that have better socio-cognitive skills would also get better ratings of social cognition and social functioning was that children who have better socio-cognitive skills related to positive social behaviors could be different from the ones related to negative social behaviors. For instance, while prosocial and aggressive children might have equivalent false-belief understanding capacities, the former might be more emotionally sensitive than the latter (Sutton et al., 1999a; Sutton, Smith, & Swettenham, 1999b).

The second main goal of the present study was to investigate the nature of these relationships in children from a culture different from the ones to which most children in previous studies belong. To our knowledge, all studies that have attempted to uncover the socio-cognitive correlates of social behavior have been conducted in Western English-speaking countries (i.e., United States, Canada, Great Britain, and Australia). Given current claims about cross-cultural differences regarding social cognition (e.g., Lillard, 1998), as well as concepts of self and interpersonal relationships (e.g., Markus & Kitayama, 1991), it is worthwhile to extend our examination of these issues to other cultural groups (Rubin, 1998).

In the English-speaking countries studied, popularity in the kindergarten years has often been found to be associated with prosocial behaviors such as sharing, helping, acting as leader, and being empathic, whereas rejection has often been associated with aggressiveness, disruptiveness, and shyness (Denham et al., 1990; Mendelson et al., 1994; Mize & Ladd, 1988; Newcomb, Bukowski, & Pattee, 1993; Wasik, Wasik, & Frank, 1993). The cross-cultural perspective intimates that these patterns of association might not be universal. In fact, while studies in European countries have found similar associations (e.g., Attili, Vermigli, & Schneider, 1997, and Casiglia, Lo Coco, & Zappulla, 1998, in Italy, and Cillessen, van Ijzendoorn, Lieshout, & Hartup, 1992, in The Netherlands), studies in Asian and Latin American countries revealed some differences from these patterns (e.g., Chen, Rubin, & Sun, 1992, in China, and Schaughey, Vannatta, Langinrichshen, Lally, & Seeley, 1992, in Argentina). The present study extends this line of inquiry to the Israeli society.

There have been suggestions in the psychological, anthropological, and sociological literature of significant differences between the Israeli and other Western societies regarding interpersonal relationships. In Bar-Tal's (2001) view, the historical and constant dissemination of discourse regarding conflict and persecution has instilled in Israelis what he calls a “fear” orientation – as opposed to a “hope” orientation. And in this personal arena, this fear orientation biases Israelis to view others as mal-intended and even threatening. This bias, in turn, makes displays of aggressiveness, assertiveness, and a “sucker” mentality (Block, 1998) more common and acceptable. Indeed, Margalit and Mauger (1984, 1985) found that Israeli adults are more accepting of assertiveness than North American adults, and often judge others’ good manners with suspicion. Findings suggest that these cultural differences are already noticeable by school age. Specifically, differently from their North American age mates, Israeli elementary school-aged children’s definition of sociable behavior seems to include assertiveness and exclude certain prosocial behaviors and sensitivity (Krissin, Sternberg, & Lamb, 1992). In light of these findings with Israeli school-aged children and adults, a second goal of the present study was to investigate whether assertiveness and aggressiveness would be valued positively even among Israeli kindergarten children.

**Methods**

**Participants**

The participants in the study included 61 Israeli kindergarten children, with a mean age of 5 years, 4 months (range: 4 years 3 months to 6 years 6 months). The participants (21 girls and 40 boys) all came from an urban middle-class neighborhood, and attended regular public kindergartens. Children came from a variety of Jewish family backgrounds (e.g., from European, North African, or Middle Eastern descent), representative of the general Israeli population. Of the 61 participants, 35 were from one kindergarten class, and 26 were from a second kindergarten. Participants represented close to 90% of all children in the classes. This was important, to ensure that children from various popularity statuses be represented in the sample. Signed parental consent was obtained for all children participating in the study. Two participants were dropped from the study, one due to a very young age (3 years 9 months), and the other due to a diagnosis of ADHD at the end of the school year. Thus the final sample included 59 children.

**Materials**

There were three measures of social functioning: (1) popularity status, (2) peers’ behavioral evaluations, and (3) teachers’ behavioral evaluations. There were also three measures of social cognition: (1) false-belief understanding, (2) emotional understanding, and (3) understanding of motives. All tasks were conducted in Hebrew.

**Popularity status.** The popularity status of each child was derived from sociometric questions administered to all participating children (based on Austin, 1984, and Peery, 1979). Participants were asked to name children in their class in response to the following six questions, presented in random order: (1) “Who do you like to play with?”; (2) “Who do you not like to play with, or do not play with very often?”; (3) “Who do you like to sit next to?”; (4) “Who do you not like to sit next to, or don’t sit next to very often?”; (5) “Who do you like to play with outside?”; (6) “Who do you not like to play with outside, or do not play with outside very often?”

For each child, a positive and a negative score was calculated for each testing time (T1 = midyear/1st administration; T2 = end of year/2nd administration) by adding all the times the child’s name was mentioned in response to the relevant questions (positive questions: 1, 3, 5; negative questions: 2, 4, 6), and then dividing by the total number of children providing ratings (either 33 or 26, depending on the kindergarten). This was then turned into a percentage score to collapse across kindergartens. These scores were referred to as “popularity score” and “rejection score”. Following Austin (1984), we split...
the scores by the means, grouping children according to whether they were above or below the mean on each measure.

Peers’ behavioral evaluations. Participating children were asked to evaluate their peers’ behaviors based on a questionnaire developed by Wasik et al. (1993). Each child was asked to nominate as many children as s/he pleased in response to the following questions, presented in random order: (1) “Who is really good in class, because he or she follows directions, helps others, and shares with others?”; (2) “Who disrupts, does not share with others, and tries to get everyone to do things his or her own way?”; (3) “Who likes to be alone, and does not like to play or work with the other kids?”; (4) “Who starts fights, pushes or hits others and says mean things?”; (5) “Who always looks for help and asks for help before trying very hard?”; (6) “Who is a leader, or a child that others would like to have as a leader?”; (7) “Who cries a lot?” Children received a score for each question by dividing the number of times a child’s name was mentioned by the number of participating children in the kindergarten, and then multiplying it by 100.

A factor analysis with Varimax rotation was conducted on the scores for all seven questions yielding three main factors with Eigenvalues over 1.0, which together explained over 74% of the variance (see Table 1). A positive behaviors factor (accounting for about 32% of the variance) included children who were highly cited in response to the “good”, “leader”, and “asks for help” questions. A negative behaviors factor (accounting for about 24% of the variance) included children who were highly cited in response to the “fights” and “disrupts” questions. Finally, a reticent behaviors factor (accounting for about 19% of the variance) included children who were highly cited in response to the “cries” and “alone” questions.

Based on this analysis, we created three scores, consisting of the average score each child received in response to the relevant questions. Thus, a “positive behaviors score” was the average rating children received in response to the “good”, “leader”, and “asks for help” questions; a “negative behaviors score” was the average for the “fights” and “disrupts” questions; and a “reticent behaviors score” was the average for the “cries” and “alone” questions.

Teachers’ behavioral evaluations. Kindergarten teachers were asked to fill out the 30 questions from the Preschool Behavior Questionnaire (Behar & Stringfield, 1974), and 10 questions from the Prosocial Behavior Questionnaire (Weir & Duveen, 1981). Thus the Teacher Behavioral Questionnaire was comprised of a total of 40 questions. The questions had the format of a behavioral description (e.g., “fights with other children”) that teachers had to evaluate to what extent it applied to each child (“definitely applies” receiving a score of 2, “sometimes applies” 1, and “never applies” 0). The validity and reliability of these questionnaires are well founded (Behar & Stringfield, 1974; Rubin, Moller, & Emptage, 1987; Weir & Duveen, 1981). In the present study, two scores were calculated for each participant: prosocial (Cronbach’s alpha = 0.91), and hostile-aggressive (Cronbach’s alpha = 0.92). (See Appendix 1 for examples of questions.)

False-belief understanding. Three tasks were used to assess children’s capacity to attribute false beliefs to others. The tasks were adapted from ones used previously in cross-linguistic work (Shatz et al., 2003). Two tasks were in the form of a storybook, and one was played out with a hand-puppet. The storybook tasks involved a change in the location of a particular object unbeknownst to the target character. For instance, children were told about a boy who, after playing with his ball in his room, exited the room leaving the ball under the chair. The boy’s dog went into the room, played with the ball, and let it roll under the bed. The boy comes back into his room, and wants to play with his ball. Children were then asked two questions about the boy’s belief: “Where does he think the ball is?” and “Where is he going to look for the ball?” (See Appendix 2 for the other story.) The puppet task involved a change in the content of a familiar container unbeknownst to the puppet (i.e., the experimenter showed children an empty crayon box, and a plain box which actually contained crayons). In this task, children were only asked: “Where does the puppet think the crayons are?” A correct answer to each question (i.e., an answer consistent with false belief) received a score of 1, and an incorrect answer (i.e., an answer consistent with reality) received a score of 0. The sum of all questions comprised a “false-belief score”, which could thus vary from 0 to 5. Reliability for this score was relatively high (Cronbach’s alpha = 0.77).

Emotional understanding. Understanding of emotions was assessed by a measure developed by Denham et al. (1990). The main objective of this measure was to assess the extent to which children are capable of recognizing that others may have an emotional response to a given situation that is opposite to their own emotional response to the same situation.

To assess children’s standard emotional responses to situations, the experimenter administered a questionnaire to the parents, in which they were asked to choose the child’s most frequent emotional response to different situations (e.g., “When your son/daughter goes to kindergarten, is he/she sad or happy?”). Given parents’ responses, the experimenter then constructed for each child a series of 12 stories in which a puppet – handled by the experimenter – felt the opposite of how the child would generally feel (e.g., if a parent reported that his/her child tends to feel happy when going to kindergarten, the puppet would be described as feeling sad when going to kindergarten). After each story, the experimenter asked the parents to rate their child’s emotional response on a scale of 1 to 5 (1 being “definitely applies” receiving a score of 2, “sometimes applies” 1, and “never applies” 0). The validity and reliability of these questionnaires are well founded (Behar & Stringfield, 1974; Rubin, Moller, & Emptage, 1987; Weir & Duveen, 1981). In the present study, two scores were calculated for each participant: prosocial (Cronbach’s alpha = 0.91), and hostile-aggressive (Cronbach’s alpha = 0.92). (See Appendix 1 for examples of questions.)

Table 1
Factor analysis weights of peer behavioral evaluations

<table>
<thead>
<tr>
<th>Positive behavior</th>
<th>Negative behavior</th>
<th>Reticent behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>.88</td>
<td>-.09</td>
</tr>
<tr>
<td>Leader</td>
<td>.85</td>
<td>.03</td>
</tr>
<tr>
<td>Asks for help</td>
<td>.82</td>
<td>.05</td>
</tr>
<tr>
<td>Fights</td>
<td>-.11</td>
<td>.91</td>
</tr>
<tr>
<td>Disrupts</td>
<td>.09</td>
<td>.91</td>
</tr>
<tr>
<td>Cries</td>
<td>-.05</td>
<td>.04</td>
</tr>
<tr>
<td>Alone</td>
<td>.22</td>
<td>.15</td>
</tr>
</tbody>
</table>

Note. Principal weights are in italics.

1 Following Denham et al.’s (1990) procedure, children were actually administered a total of 20 stories, such that in addition to the 12 stories in which the puppet felt the opposite of how children generally feel, children also heard eight stories in which the puppet felt the same way children generally feel. Given our interest in the extent to which children are sensitive to how others feel, we focused our analyses exclusively on the stories in which the child’s and the puppet’s feelings differed.
asked the child, “How does [the puppet] feel?” (See Appendix 3 for examples.) Children had to answer by affixing one of four facial expressions – happy, sad, angry, and afraid – that they had previously identified onto the puppet’s face. Children’s responses were scored as 2 if the correct emotion was chosen (e.g., sad in the example above), 1 if the correct valence was chosen (e.g., choosing afraid instead of sad), and 0 if the wrong emotion was picked (e.g., happy). An average score for each valence (positive or negative) was extracted, thus resulting in a “positive emotion score” and a “negative emotion score”.

Understanding behavioral motives. Understanding behavioral motives was assessed using a task developed by Heyman and Gelman (1998). The goal of this task was to evaluate to what extent children make their evaluations of actions based either on agents’ motives or the outcomes of agents’ actions.

Participants were told four stories that varied in the motive (positive or negative) of the main character (agent), and in the outcome (positive or negative) of the agent’s action for another character (patient). Given our goal, we were primarily interested in stories where the motive and the outcome conflicted (i.e., stories with a positive motive but negative outcome, and stories with a negative motive and a positive outcome). Each story was presented on a two-page booklet that contained line drawing illustrations identical to Heyman and Gelman’s (1998). The first picture was shown to the child, accompanied by a verbal explanation, e.g., “Vered is drawing pictures in Yoni’s notebook.” The second picture shown to the child depicted the outcome of the agent’s actions, and thus differed between stories, e.g., “Yoni sees the pictures that Vered drew in his notebook, and he is happy [positive outcome] OR he is sad [negative outcome].” When the outcome was positive, the patient was depicted with a pleased expression, and when it was negative, the patient was depicted with a displeased expression. At the end of the story, the experimenter told children the agent’s motive, either positive or negative; e.g., “Vered did it to make Yoni happy [positive motive] OR upset [negative motive].”

After hearing each story, participants answered a series of eight questions about the agent. Questions had to do with the agent’s feelings, evaluations of the agent, and the stability of the agent’s behavior. Response formats varied for the different types of questions in order to ensure that participants could not answer in a trait-consistent fashion merely by adopting a stable answering pattern (e.g., always answering “yes”). The eight questions were: (1) “How do you think [the agent] felt about what happened to [the patient]?” Children were asked to indicate their response on a scale of five faces from a very large smile to a very large frown. (2) “Do you think [the agent] is a [nice or mean] person?” This was followed up with a question to specify whether the agent was “very nice/mean” or “a little nice/mean.” (3) “Do you think what [the agent] did was a [nice or mean] thing to do?” This was also followed up with a question to specify whether the agent’s action was “very nice/mean” or “a little nice/mean.” (4) “Do you think you would like to be friends with [the agent]?” Responses were yes, not sure, or no. (5) “If someone fell and got hurt when playing on the playground and asked for help, do you think [the agent] [would go and help or would walk away and not help]?” Possible responses were: would help, neither, or would not help. (6) “Suppose [the agent] has 12 shekels. If another child needed some shekels, how many out of the 12 would [the agent] share?” Twelve coins were used as props, and participants could express their answer either by reporting a number or placing the coins in a pile. (7) “Suppose the next day another child works for a long time on a picture. Do you think [the agent] would want it to [turn out great or get ruined]?” Possible responses were: great, neither, or get ruined. (8) “Suppose the next day [the patient] works for a long time on a picture. Do you think [the agent] would want it to [turn out great or get ruined]?” Possible responses were: great, neither, or get ruined.

Responses were coded on a scale from 1 to 5 according to congruency with motive. That is, on all questions, 5 was given if the child responded according to the agent’s motive, and 1 if the child responded according to the outcome of the action. Preliminary analyses revealed that children had difficulty understanding the “money” question and it was therefore excluded from the statistical analyses. Scores for all questions were averaged to provide a general “understanding of motives” score.

Procedure

The study was conducted in two separate kindergartens. All tasks, except the popularity status questionnaire, were administered once, in the first half of the school year. The popularity status questionnaire was administered both in the first half of the school year and towards the end of the year. After a period getting familiarized with the children, a trained experimenter invited each child twice to play with her in a quiet area of the kindergarten. In one of the meetings the child was administered the understanding behavioral motives task, followed by the false-belief tasks, and finally the peers’ behavioral evaluation measure. This meeting took approximately 20 minutes. In the other meeting, the emotional understanding task was administered first, followed by the popularity status questionnaire. This meeting was approximately 15 minutes long. Peer ratings were administered at the end of each meeting so that children would not be self-conscious or biased during the administration of the other tools. The meetings took place within a 2-week period. Towards the end of the school year, the experimenter returned to the kindergartens to administer the popularity status for the second time. Teachers filled out the teacher behavioral evaluation questionnaire for each participating child and returned it to the experimenter. Children were awarded a small gift in gratitude for their participation.

Results

Preliminary analyses

Preliminary ANOVAs were conducted on all four socio-cognitive measures, using the two demographic categorical variables (i.e., gender and kindergarten) as independent variables. The only significant effects found were with regards to kindergarten. Specifically, there were significant differences between the kindergartens on false-belief scores, $F(1, 57) = 9.12$,
regards to the understanding of motives scores,cant effect was a difference between the popularity groups with were entered as dependent variables. In T1, the only signifi-
on rejection scores), as well as kindergarten, were entered as
scores) and rejection groups (i.e., above versus below the mean
each time (T1 and T2) separately. In these analyses, popular-
. MANOVAs were conducted on the two
Popularity status. MANOVAs were conducted on the two
popularity status measures (popularity and rejection scores) for
each time (T1 and T2) separately. In these analyses, popularity
groups (i.e., above versus below the mean on popularity
scores) and rejection groups (i.e., above versus below the mean
on rejection scores), as well as kindergarten, were entered as
independent variables, and all the socio-cognitive variables
were entered as dependent variables. In T1, the only signifi-
cant effect was a difference between the popularity groups with
regards to the understanding of motives scores, $F(1, 51) = 5.71, p < .05$. Specifically, children rated above the mean in
popularity were more likely to evaluate a character’s action
based on his/her motives ($M = 3.32, SD = 0.64$) than were children rated below the mean ($M = 2.88, SD = 0.73$). None
of the other socio-cognitive measures came out as significant,
rejection status had no significant effects, and there was no
significant interaction between popularity and rejection
groups. In T2, a similar, though only marginally significant,
pattern of findings was found. Children high in popularity were
marginally better in understanding motives ($M = 3.35, SD =
0.66$) than were children low in popularity ($M = 2.92, SD =
0.72$), $F(1, 52) = 3.83, p = .056$.

We conducted a further analysis in order to assess potential
differences in socio-cognitive skills among children whose
popularity status changed or remained stable for T1 to T2. For
this analysis, we classified children into three groups: 1 =
children who were high on popularity at both times, 2 =
children who were low on popularity at both times, and 3 =
children whose status changed from T1 to T2 (either from high
to low or from low to high). First, it is interesting to note that
there was a fair degree of stability in children’s status. In
particular, 20 of the 59 children remained highly popular, 30
remained lowly popular, and only 9 children changed status.
Second, a MANOVA on the four socio-cognitive measures
again revealed only a significant effect of understanding of
motives, $F(1, 53) = 4.23, p < .05$. Post hoc Scheffé tests ($p <
.05$) revealed that the only significant difference was that
children who were highly popular at both times received higher
scores on understanding motives ($M = 3.35, SD = 0.68$) than
did children who were lowly popular at both times ($M = 2.85,
SD = 0.74$).

**Relationships between socio-cognitive measures and
popularity and behavioral measures**

One of the primary goals of this study was to assess the
relationships between particular socio-cognitive skills and
children’s social functioning. In order to address this goal, a
series of analyses were conducted on popularity and each
social behavior separately. In all these analyses, the same four
socio-cognitive measures were entered as dependent variables:
false-belief score, positive emotion score, negative emotion
score, and understanding of motives score.

**Table 2**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Mean (possible range)</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>False-belief</td>
<td>3.00 (0–5)</td>
<td>1.76</td>
</tr>
<tr>
<td>Positive emotions</td>
<td>1.81 (0–2)</td>
<td>0.48</td>
</tr>
<tr>
<td>Negative emotions</td>
<td>1.53 (0–2)</td>
<td>0.31</td>
</tr>
<tr>
<td>Understanding motives</td>
<td>3.06 (0–5)</td>
<td>0.72</td>
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</tbody>
</table>

$p < .01$, and on negative emotion scores, $F(1, 57) = 7.48, p <
.01$. For this reason, we decided to include kindergarten as a
group variable on all further analyses. (Table 2 presents
descriptive statistics on the socio-cognitive measures.)

Peer behavioral evaluations. We conducted three separate
stepwise regressions on the three peer behavioral scores (i.e.,
positive, negative, and reticent). In these analyses, kinder-
garten was entered in the 1st step, false-belief scores in the
2nd, positive and negative emotion scores in the 3rd, and
understanding of motives scores in the last. The reasons for
entering the socio-cognitive measures in this order were
twofold. First, the order reflects their sequence of develop-
ment: false-belief understanding appearing around 4 to 5 years
of age (Wellman et al., 2001), understanding of opposite
emotions around 5 (Denham et al., 1990), and understanding
behavioral motives later (Heyman & Gelman, 1998). Second,
the order reflects the extent to which these capacities have been
addressed in the pertinent literature: as reviewed earlier, false
belief has been the most commonly assessed, followed by
understanding of emotions, whereas understanding of motives
has never been investigated.

The only significant regression was the one on positive
behavioral evaluations, with the complete model accounting
for about 19% of the variance, $F(5, 53) = 2.45, p < .05$. As
can be seen in Table 3, the only step in which there was a
significant change in the $R^2$ was the step in which false-belief
scores were entered into the regression. In particular, children
with higher positive behavioral evaluations had higher scores
on false-belief understanding. The contribution of false-belief
scores for explaining positive peer behavioral evaluations
remained significant through all steps. The regression models
on the negative and the reticent peer behavioral evaluations
were not significant. Nonetheless, understanding of positive

**Table 3**

<table>
<thead>
<tr>
<th>Step</th>
<th>$B$</th>
<th>$SE$</th>
<th>$β$</th>
<th>Model $R^2$</th>
</tr>
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<tbody>
<tr>
<td>Step 1</td>
<td>.02</td>
<td>1.24</td>
<td>.003</td>
<td>.000</td>
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<tr>
<td>Step 2</td>
<td>-1.29</td>
<td>1.26</td>
<td>-.14</td>
<td>.123*</td>
</tr>
<tr>
<td>Step 3</td>
<td>1.00</td>
<td>.36</td>
<td>.38*</td>
<td>.164*</td>
</tr>
<tr>
<td>Step 4</td>
<td>-.85</td>
<td>1.32</td>
<td>-.09</td>
<td>.187*</td>
</tr>
</tbody>
</table>

Note. $ΔR^2$ for Step 2 = .123, $F(1, 56) = 7.82, p < .01$; * $p < .05$. 


emotions did significantly contribute in itself to negative peer behavioral evaluations ($\beta = -0.32$, $t = -2.45$, $p < .05$), such that children with higher negative behavioral evaluations had lower scores on positive emotional understanding.

Overall, the relations were in the predicted direction. Children rated more positively by their peers were better at understanding that another child may have different beliefs from the ones they hold. Children rated more negatively by their peers were less likely to understand that another child may have different positive emotions towards events from the ones they generally have.

**Teacher behavioral evaluations.** Stepwise regressions were also conducted on each of the two teacher behavioral measures (i.e., prosocial and hostile-aggressive). Here too, kindergarten was entered in the 1st step, false-belief scores in the 2nd, positive and negative emotion scores in the 3rd, and understanding of motives scores in the last step.

Both regression models were significant. As can be seen in Table 4, for the prosocial evaluations, the model accounted for almost 45% of the variance, $F(5, 53) = 8.50$, $p < .001$. In particular, even after accounting for the significant contribution of kindergarten, both false-belief scores and positive emotional understanding scores significantly contributed to the regression. Specifically, children with higher prosocial evaluations had higher scores on both false-belief understanding and positive emotional understanding, effects that remained significant through all steps.

Regarding hostile-aggressive evaluations, a similar pattern was found. As can be seen in Table 5, the complete model accounted for about 28% of the variance, $F(5, 53) = 4.21$, $p < .005$. After accounting for the significant contribution of kindergarten, positive emotional understanding made a significant contribution, while false belief only a marginally significant one. Children with higher hostile-aggressive evaluations had lower scores on positive emotional understanding and a tendency for lower false-belief understanding, again effects that remained stable through all regression steps.

### Relationships among social functioning measures

A secondary goal of the study was to address the relationship among popularity, peers’, and teachers’ evaluations of social behavior in Israeli kindergarten children. The main question was whether the presumably unique attributes of social relations valued by school-age Israeli children would also be found among kindergarteners. To address this question, we examined the correlations among the social functioning measures, controlling for the already reported effect of kindergarten. Our main interest was in the correlations between the different assessments of social functioning. Nonetheless, the fact that popularity measures were assessed at two different times in the school year allowed us to assess the stability of these ratings. And indeed, as can be seen in Table 6, there were strong correlations between popularity ratings and between rejection ratings across time.

More importantly, rejection scores at T1 were positively related to teachers’ evaluation of hostile-aggressiveness and with peers’ evaluations of reticent behaviors. That is, children who were more frequently rated by their peers as being disliked were more likely to be rated by their teachers as behaving aggressively, and by their peers as being children who are often alone or crying. Children whom their peers rated positively (e.g., children rated as leaders or as being good) were also likely to be rated by their teachers as children who behave prosocially. Conversely, children whom their peers rated negatively (i.e., children who frequently fight or disrupt) were likely to be rated by their teachers as children who behave aggressively, and not as children who behave prosocially. Altogether, this pattern of correlations is similar to the one found in kindergarten children from other cultures.

### Table 4

<table>
<thead>
<tr>
<th>Step</th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
<th>Model $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Kindergarten</td>
<td>-3.27</td>
<td>1.29</td>
<td>-.32*</td>
</tr>
<tr>
<td>Step 2</td>
<td>Kindergarten</td>
<td>-4.81</td>
<td>1.29</td>
<td>-.47**</td>
</tr>
<tr>
<td></td>
<td>False-belief</td>
<td>1.18</td>
<td>.37</td>
<td>.40**</td>
</tr>
<tr>
<td>Step 3</td>
<td>Kindergarten</td>
<td>-5.60</td>
<td>1.20</td>
<td>-.54**</td>
</tr>
<tr>
<td></td>
<td>False-belief</td>
<td>1.17</td>
<td>.32</td>
<td>.40**</td>
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<tr>
<td></td>
<td>Positive emotions</td>
<td>4.59</td>
<td>1.11</td>
<td>.42**</td>
</tr>
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<td></td>
<td>Negative emotions</td>
<td>2.23</td>
<td>1.79</td>
<td>.13</td>
</tr>
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<td>Kindergarten</td>
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<td>1.20</td>
<td>-.55**</td>
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<tr>
<td></td>
<td>False-belief</td>
<td>1.21</td>
<td>.33</td>
<td>.41**</td>
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<td></td>
<td>Positive emotions</td>
<td>4.60</td>
<td>1.11</td>
<td>.42**</td>
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<tr>
<td></td>
<td>Negative emotions</td>
<td>2.53</td>
<td>1.83</td>
<td>.15</td>
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<td></td>
<td>Understanding motives</td>
<td>-.67</td>
<td>.75</td>
<td>-.09</td>
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</tbody>
</table>

**Note.** $\Delta R^2$ for Step 2 = .140, $F(1, 56) = 10.33$, $p < .005$; $\Delta R^2$ for Step 3 = .196, $F(2, 54) = 9.40$, $p < .005$; $p < .05$; ** $p < .005$.

### Table 5

<table>
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<tr>
<th>Step</th>
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<th>$\beta$</th>
<th>Model $R^2$</th>
</tr>
</thead>
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<td>2.78</td>
<td>1.09</td>
<td>.32*</td>
</tr>
<tr>
<td>Step 2</td>
<td>Kindergarten</td>
<td>3.52</td>
<td>1.16</td>
<td>.40**</td>
</tr>
<tr>
<td></td>
<td>False-belief</td>
<td>-5.57</td>
<td>.33</td>
<td>-.23*</td>
</tr>
<tr>
<td>Step 3</td>
<td>Kindergarten</td>
<td>3.78</td>
<td>1.14</td>
<td>.43**</td>
</tr>
<tr>
<td></td>
<td>False-belief</td>
<td>-.56</td>
<td>.31</td>
<td>-.23*</td>
</tr>
<tr>
<td></td>
<td>Positive emotions</td>
<td>-3.34</td>
<td>1.06</td>
<td>-.36**</td>
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<tr>
<td></td>
<td>Negative emotions</td>
<td>-.08</td>
<td>1.72</td>
<td>-.01</td>
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<tr>
<td>Step 4</td>
<td>Kindergarten</td>
<td>3.74</td>
<td>1.15</td>
<td>.43**</td>
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<tr>
<td></td>
<td>False-belief</td>
<td>-.53</td>
<td>.31</td>
<td>-.22*</td>
</tr>
<tr>
<td></td>
<td>Positive emotions</td>
<td>-3.34</td>
<td>1.07</td>
<td>-.36**</td>
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<tr>
<td></td>
<td>Negative emotions</td>
<td>.12</td>
<td>1.76</td>
<td>.01</td>
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<tr>
<td></td>
<td>Understanding motives</td>
<td>-.44</td>
<td>.72</td>
<td>-.07</td>
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</table>

**Note.** $\Delta R^2$ for Step 2 = .045, $F(1, 56) = 2.96$, $p < .1$, $\Delta R^2$ for Step 3 = .133, $F(2, 54) = 4.97$, $p < .05$; * $p < .1$; ** $p < .05$. ** $p < .005$. 

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Altogether, this pattern of correlations is similar to the one found in kindergarten children from other cultures.
reading through" people's actions, and making consistent
In other words, popular children seem better capable of
positive, irrespective of the present action.
would act in a positive way across contexts and time, if told
popular children are the most likely to believe that a person
unique contributions of the present study – that was related to
the fact that it was understanding of motives – one of the
mediated by other factors (e.g., Slaughter et al. 2002). Second,
find it the relationship seems to be somewhat weak and perhaps
found (e.g., Badenes et al., 2000), and even in those that did
have been other studies in which this relationship was not
be also related to popularity status (Peterson & Siegel, 2002; Walden, Lemerise, & Smith, 1999).
Third and finally, the finding that this capacity was only associ-
ated with peers’, as opposed to teachers’, evaluations of children, on the one hand reinforces its importance to peer
interactions, while on the other emphasizes the need to
discriminate between specific socio-cognitive capacities and
their potential relation to social behavior.
False-belief understanding was related to both peers’
positive behavioral evaluations and teachers’ prosocial eval-
uations. Specifically, children with better understanding that
others may act on the basis of a false belief about reality – a
milestone skill in building a theory-of-mind – were the ones
most frequently mentioned by their peers as being good and
leaders, and by their teachers as acting prosocially. Arguably,
false-belief understanding is intimately related to perspective
taking (Flavell & Miller, 1998). It thus might be that “good”
and prosocial children are those who manage to assess and
respond appropriately to their peers’ perspectives.
While false-belief understanding was only related to these
positive behavioral measures, understanding emotions was
primarily related to negative behavioral measures. Specifically,
children with worse understanding that others might feel
differently from themselves about events in which they typi-
cally react positively were the ones most frequently mentioned
by their peers as being disruptive and fighters, and by their
teachers as acting aggressively (they were also the least likely
to behave prosocially, according to their teachers).
This seeming dissociation between socio-cognitive capacities
and the valence of behavioral measures is consistent with the
claim that false-belief understanding does not always go along
with emotional understanding (Astington & Jenkins, 1995;
Dunn, 1995). False-belief understanding is taken to require a
capacity to represent the contents of someone else’s mind as
different not only from one’s own, but also from reality itself.
In turn, understanding others’ emotions, particularly as it was
assessed in the present study, not only involves a representa-
tional component, but it evidently also involves children’s
feelings, and children’s capacity to inhibit or detach themselves
from these feelings. The present suggestive dissociation
intimates that what is unique about disruptive and aggressive
children is not their representational capacity – a conclusion

### Table 6

<table>
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<tr>
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<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
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<td>1. Popularity score – T1</td>
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<tr>
<td>2. Rejection score – T1</td>
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<tr>
<td>3. Popularity score – T2</td>
<td>n.s.</td>
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<td>4. Rejection score – T2</td>
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<tr>
<td>5. Positive</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
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<td>6. Negative</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
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<td>7. Reticent</td>
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<td>8. Prosocial</td>
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<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.38**</td>
<td>-.29*</td>
<td>n.s.</td>
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<td>9. Hostile-aggressive</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td>.26*</td>
<td>n.s.</td>
<td>n.s.</td>
<td>.60**</td>
<td>-.42**</td>
</tr>
</tbody>
</table>

*Note. * p < .05; ** p < .005; n.s. = not significant at p = .05.

### Discussion

One of the main goals of the present article was to broaden
our understanding of the various socio-cognitive capacities
associated with kindergarten children’s popularity and social
behavior. The general hypothesis was that children with better
socio-cognitive skills would be the ones receiving better eval-
uations of popularity and social behavior. Overall, the findings
supported this general hypothesis, in that all significant
relations between these dimensions were in this direction.
However, our main interest in this respect was in uncovering
potential differences in terms of specific associations between
socio-cognitive and popularity and behavioral measures.

We found that children who were better at understanding
others’ action in terms of motives were the ones most liked by
their peer both in the present and in the future. Children who
were better at understanding that others may hold false beliefs
about reality were the ones who, according to their peers, most
frequently engage in positive behaviors and who, according to
their teachers, most frequently engage in prosocial behaviors.
Finally, children who were better at understanding that others
may have different emotions than their own towards certain
situations were the ones who, according to their peers, least
frequently engage in negative behaviors and who, according to
their teachers, most frequently engage in prosocial behaviors
and least frequently in aggressive behaviors.

The finding that the only socio-cognitive measure signifi-
cantly related to popularity was understanding of motives
deserves some consideration. First, given certain previous
studies, one might have expected false-belief understanding to
be also related to popularity status (Peterson & Siegel, 2002;
Slaughter et al. 2002; Watson et al., 1999). Nonetheless, there
have been other studies in which this relationship was not
found (e.g., Badenes et al., 2000), and even in those that did
find it the relationship seems to be somewhat weak and perhaps
mediated by other factors (e.g., Slaughter et al. 2002). Second,
the fact that it was understanding of motives – one of the
unique contributions of the present study – that was related to
popularity is especially interesting. The finding reveals that
popular children are the most likely to believe that a person
would act in a positive way across contexts and time, if told
that the person’s motives in a specific present action were
positive, irrespective of the consequences of the present action.
In other words, popular children seem better capable of
“reading through” people’s actions, and making consistent
attributions based on such a reading. Already in kindergarten,
children seem to appreciate this capacity in their peers, a
capacity that may in fact be central to the selection of potential
friends, and the formation of stable mutual friendships (see
Peterson & Siegel, 2002; Walden, Lemerise, & Smith, 1999).

consistent with the notion that children with conduct problems seem to hold a “theory of nasty minds” (Happé & Frith, 1996). Rather, what distinguishes them is their difficulty in interpreting another person’s emotional state. This dissociation can thus help explain a recent debate about whether or not bullies have “superior” social cognition (cf. Crick & Dodge, 1999; Sutton et al., 1999a). The message is that while they may have adequate false-belief understanding, they have inadequate emotional understanding. While most of the studies supporting this dissociation have been conducted with school-aged children (e.g., Sutton et al., 1999b; Warden & MacKinnon, 2003), there are some indications that this dissociation is present already by kindergarten (e.g., Cassidy et al., 2003).

From a more practical perspective, these findings expose the tremendous impact this dissociation might have on children’s social behavior. In particular, disruptiveness is one of the main predictors of later maladjustment in school, drop-out likelihood, and violent behavior (Vitaro, Brendgen, & Tremblay, 1999). An understanding of the specific socio-cognitive capacities associated with this behavior can potentially help devise more effective intervention techniques.

An issue unresolved by the above findings is the causal direction of the relation between social cognition and behavior. On the one hand, it could be that children who have a well-developed theory-of-mind, by nature of being sensitive to and aware of their peers’ internal states, gain their peers’ liking (Astonington & Jenkins, 1995). On the other hand, it could be that children who are popular, by having more frequent, intimate, and rich social relationships, enjoy the kinds of social interactions that have been argued to promote theory-of-mind understanding (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991).

While the present study was not designed to address these possibilities, its findings urge future research to investigate the directionality issue beyond the realm of false-belief understanding, extending it onto other socio-cognitive capacities. What would be needed are assessments of both socio-cognitive capacities and social functioning at various points in development so as to evaluate the relative strengths of temporal relationships between constructs, while controlling for simultaneous effects. It would be commendable for such a study to also overcome certain of the limitations of the present study, such as the use of a larger sample size. Such a project might also help assess the nature of the relationships among some of these constructs. For instance, whether socio-cognitive capacities have a direct effect on popularity, or whether this effect is mediated by social behavior.

The second main goal of the present study was to examine the relationship between popularity and social behavior in Israeli children. There are indications that, compared to other Western countries, both adults and school-aged Israeli children seem to be more tolerant of assertiveness and less tolerant of good manners and sensitivity in their evaluations of social behaviors (Krispin et al., 1992; Margalit & Mauger, 1984). The present findings indicate that kindergarten-aged Israeli children do not share these values. In general, children who were liked by their peers or were considered good were more likely to behave prosocially and less likely to behave aggressively. These associations are comparable to those reported in studies with kindergarten-aged children from other Western countries (Denham et al., 1990; Mendelson et al., 1994; Mize & Ladd, 1988; Newcomb et al., 1993; Wasik et al., 1993).

It seems that whatever differences there might be regarding how social relationships are evaluated in Israel and other Western countries, these differences get manifested only after the kindergarten years. A plausible explanation for this developmental trend has to do with the finding that it is during the elementary school years that children switch from conforming to parental values (Allen & Newtson, 1972) to conforming to peer values (Berndt, 1979). It is likely that Israeli kindergarten teachers and parents emphasize the kinds of prosocial behavior commonly found associated with children who are evaluated positively by their peers. It is only by the time they reach elementary school that Israeli children start getting exposed – and valuing – the assertive/aggressive behaviors endorsed by the peer group. Evidently, further studies are needed in order to address this hypothesized interaction between age and the acquisition of cultural values.

In conclusion, the present study exposed the importance of focusing on a variety of children’s socio-cognitive measures in order to better identify and understand their specific relationships to popularity and socio-behavioral measures. The study further revealed that despite presumed differences in cultural norms manifest at least by school age, Israeli kindergarten-aged children seem to share with children from a variety of countries similar criteria for evaluating their peers’ social behavior. By understanding these relationships, their universality, and the mechanisms underlying them, we might eventually become better able to intervene and help children at risk even at the kindergarten stage.

References


Appendix 1
Examples of questions in the Teachers’ Behavioral Evaluation Questionnaire

**Examples of prosocial questions**
If there is a quarrel or dispute will try to stop it.
Will invite bystanders to join in a game.
Will try to help someone who has been hurt.
Comforts a child who is crying or upset.

**Examples of hostile-aggressive questions**
Destroys own or others’ belongings.
Fights with other children.
Not much liked by other children.
Irritable, quick to “fly off the handle”.

Appendix 2
Example of False Belief Story

**“Sally and the Juice”**
Sally just came home from school and she is very thirsty. She goes to the refrigerator and looks for a drink. There is only ONE of her favorite juice left. So she takes it and starts drinking it. Sally doesn’t drink all the juice so she puts the juice box in the refrigerator to drink it later. She goes to watch TV.
[Experimenter asks:] Where is the juice now?
Here’s Sally’s brother Peter. While Sally was watching TV, Peter went into the kitchen and looked for a drink in the refrigerator. He picked up Sally’s juice and is taking it into his room. When her favorite program is over, Sally goes to get her juice to finish it.
[Experimenter asks:] Where does Sally think the juice is?
[Experimenter asks:] Where will Sally look for the juice?
[Experimenter asks:] Will Sally find the juice there?
[Experimenter asks:] Look, Sally is looking for her juice.
[Experimenter asks:] Why is Sally looking for the juice there?
[Experimenter asks:] Where is the juice really?
Look. Sally found her juice in Peter’s room!

Appendix 3
Examples of Emotional Understanding Stories with Puppet Commentaries

1. Here come Nancy/Johnny and her/his mommy. We are coming to school.
   *Happy.* I like it here! We have so much fun!
   *Sad.* I don’t like it here. I miss my mommy. Don’t go, Mommy!

2. Hi, Mommy. What are you cooking?
   *Mad.* Mother-puppet: [favorite food] Child-puppet: Ugh! Yuck! I won’t eat it!
   *Happy.* Mother-puppet: [least favorite food] Child-puppet: Yum, yum! That sounds great!

3. Here comes a big dog.
   *Scared.* He looks mean; his teeth are big.
   *Happy.* He looks nice; his big teeth are smiling at me.