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Gender Differences in the Relationship Between Young Children's Peer-Related Social Competence and Individual Differences in Theory of Mind

SUE WALKER
School of Early Childhood
Queensland University of Technology, Brisbane, Australia

ABSTRACT. In this study, the author examined the relationship between theory-of-mind understanding and preschool-aged children's peer-related social competence. One hundred eleven 3- to 5-year-old children (48 boys, 63 girls) participated in 2 theory-of-mind tasks designed to assess their understanding of false belief. Teachers rated children's peer-related social behavior in terms of prosocial behavior, aggressive or disruptive behavior, and shy or withdrawn behavior. Results indicated that, after controlling for age, theory-of-mind understanding significantly predicted aggressive or disruptive behavior for boys and prosocial behavior for girls. Theory-of-mind understanding also was related to lower scores of shy or withdrawn behavior for boys. Results are discussed in terms of the gender differences in the factors contributing to early peer competence.

Key words: gender differences, preschool children, social competence, theory of mind

THE TERM *THEORY OF MIND* has been used to refer to the understanding that the mental states of others in terms of beliefs, desires, and feelings may differ from one's own and that actions are often a product of those mental states (Wellman, 1990). The ability to represent mental states or have an understanding of the thoughts, feelings, and desires of others can be seen as central to successful social interactions. The early stages of children's developing understanding of the mind have received a great deal of attention over the past decade (see Wellman, Cross, & Watson, 2001, for a review). Of particular interest has been the age at which chil-

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Address correspondence to Sue Walker, School of Early Childhood, Queensland University of Technology, Victoria Park Rd., Kelvin Grove, QLD, 4069; sx.walker@qut.edu.au (e-mail).

dren show an understanding of the relationship between the mental states of others and their overt actions. Much of the empirical research in this area has focused on age differences in performance on theory-of-mind tasks. Classic tests of false belief have indicated that by about 4 years of age, typically developing children are able to make inferences about the beliefs and desires of other people, to use this information, and to interpret their behavior (Wellman, 1990, 1991; Wellman & Bartsch, 1994). Within the topic of children's understanding of mental states, researchers have been interested in the question of individual differences in children's ability to predict the behavior of others on the basis of their mental states.

Researchers have examined individual differences in terms of the role played by children's early experiences, particularly social interactions, in facilitating the development of children's ability to conceive of actions as arising from mental states such as beliefs. For example, family conversation patterns, which include discussions about feelings, beliefs, intentions, desires, and other mental states, are associated with better performances on theory-of-mind tasks (Bartsch & Wellman, 1995; Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991; Dunn & Hughes, 1998). The presence of siblings has been shown to contribute similarly to the rate at which children are able to achieve success on false-belief tasks (Jenkins & Astington, 1996; Peterson, 2000). Jenkins and Astington suggested that it may be the discussions of different perspectives and disputes involving talk about causality between siblings that enable children to increase their understandings of intentionality and the relationship between thoughts and behavior.

Researchers have started to include the exploration of individual differences in children's understanding of theory of mind in an examination of the relationship between children's understanding of mental states and the ways in which they interact with others. For example, the results of studies to assess children's early emotional understanding and affective perspective taking have indicated that high performance on tasks that involve perspective-taking skills seems to be associated with cooperative play behavior as early as 3 to 4 years of age (Dunn et al., 1991). The ability to attribute mental states to others also has been linked to individual differences in early fantasy and pretence (Schwebel, Rosen, & Singer, 1999; Taylor & Carlson, 1997). Associations also have been found between theory-of-mind ability and the quality of children's interactions with friends in terms of levels of conflict and smooth communication (Dunn & Cutting, 1999), amount of time spent in explicit role assignment during pretend play, and ability to engage in joint planning of pretend play with peers (Astington & Jenkins, 1995; Jenkins & Astington, 2000). Children's understanding of mental states also seems to play a role in the production of prosocial behavior and the display of positive social skills (Dennis & Slaughter, 2000; Watson, Nixon, Wilson, & Capage, 1999). These studies highlight the fact that competent interactive behavior and mental state understanding are intimately related.

Successful social relationships in the early years provide the opportunity for increased learning about the relationships between thought and behavior. A developing understanding of the relationships between underlying mental states, such

as beliefs and intentions, and overt behaviors have similar important consequences for children's ability to function successfully in their relationships with their peers. The relationships that have been described between competent interactive behavior and mental state understanding have suggested that children who are unable to understand that actions are the product of underlying mental states may be less successful in their relationships with their peers. These children may be at risk for ongoing peer relationship difficulties and consequent long-term social adjustment problems. Thus, further investigation of qualitative individual differences in theory-of-mind understanding is needed if the relationship between theory-of-mind understanding and children's social interactions can be more fully understood. An understanding of false belief, emerging between 3 and 4 years of age, seems to be a critical step toward a child's coherent, conceptual understanding of the mind. In this study, I investigated the relationships between measures of peer-related social competence and success or failure on tasks related to this specific aspect of mental state understanding.

In the present study, I also explored the question of gender differences in the relationship between theory-of-mind understanding and peer-related social competence. Most investigators who have studied individual differences in theory-of-mind understanding have not addressed the issue of gender. However, several researchers have suggested that gender differences exist in social–cognitive functioning. For example, studies conducted with preschool children have indicated that there may be important gender differences in the ways in which children think about social problems and solve interpersonal conflicts (Miller, Danaher, & Forbes, 1986; Musun-Miller, 1993; Walker, Irving, & Berthelsen, 2002). The social goals chosen by children and the strategies that children select to achieve these goals are influenced by the information accessed from the social environment, and the skill of accurately determining another's social intentions seems to be highly correlated with social competence (Dodge & Feldman, 1990; Rubin & Krasnor, 1992). That girls seem to be more competent overall in determining the intentions of others and in generating effective solutions to social problems (e.g., Putallaz, Hellstern, Sheppard, Grimes, & Glodis, 1995) might suggest that they are more intuitive than boys are. Charman, Ruffman, and Clements (2002), who found weak gender differences in false-belief understanding for the younger cohorts in their sample of 3- to 5-year-old children, provided some support for this proposition. Another important consideration in this study was determining how any gender differences in mental state understanding might be related to differences in peer-related social competence.

Method

Participants

The sample consisted of 53 three- to four-year-old children (*M* age = 44.5 months, *SD* = 2.60) and 58 four- to five-year-old children (*M* age = 55.9 months,

SD = 5.35) from four suburban, community-based, sessional community preschools and kindergartens in Queensland, Australia. Community kindergartens and preschools in Queensland are noncompulsory and enroll children from 3 to 5 years of age before they enter formal school. The teaching staff consists of qualified early childhood teachers who implement play-based curricula. Each center that participated in the present study managed a 2-day kindergarten program for 3- to 4-year-old children and a 3-day preschool program for 4- to 5-year-old children. The 3- to 4-year-old sample included 25 boys and 28 girls and the 4- to 5-year-old sample included 23 boys and 35 girls.

Measures

Theory of mind. I gave children two standard false-belief tasks, which I acted out with large dolls. The order of the tasks was counterbalanced across children. One task consisted of a standard change-of-location task (Baron-Cohen, Leslie, & Frith, 1985). I introduced two dolls named Sally and Ann. Sally had a basket; Ann had a box. Sally hid a marble in her basket and departed. While she was gone, Ann moved the marble to the box. On Sally's return, I asked the children a belief question ("Where will Sally look for the marble?") followed by two memory control questions ("Where is the marble now?" and "Where did Sally put the marble?"). To pass the task, children needed to correctly answer both control questions and demonstrate an understanding of false belief by correctly predicting that Sally would look for the marble in the basket.

The second task was a standard misleading container task with two components (Perner, Frith, Leslie, & Leekam, 1989). I showed children a sweets box that actually contained pencils and asked what they thought was inside. After I showed them that the box contained pencils, I asked them, "When you first saw the box, what did you think was inside?" This question required children to remember a previous knowledge state that was different from their present knowledge state and has been termed the *representational change* question (Watson et al., 1999). I then introduced a new doll and asked the children, "What does Nicky think is in the box?" (false belief of other question). To pass the task and demonstrate an understanding of false belief, the children needed to be able to recognize their own original false belief and understand the false belief of another person by stating that Nicky would think that there were sweets in the box. I scored these two questions as separate false-belief questions because, for each of the scenarios, the children had to recognize a belief that differed from reality.

I gave each correct response to each question a score of 2 and an incorrect response to each question a score of 0. I analyzed children's performance on individual tasks and summed the responses to the two tasks, which resulted in a total theory-of-mind score. Researchers have indicated that aggregating scores across tasks is appropriate because of high correlations in children's performance across various theory-of-mind tasks (Slaughter & Gopnik, 1996; Watson et al., 1999).

The total theory-of-mind scores ranged from 0 to 6.

Profile of Peer Relations (PPR; Walker, Berthelsen, & Irving, 2000). I asked teachers at the children's preschools to rate each of the participating children in their kindergarten and preschool groups in terms of their peer-related social skills. Teachers completed the 25-item PPR. The PPR includes (a) items that assess the frequency of positive and negative play behaviors such as cooperative play, verbal aggression, and physical aggression; (b) items that detail a variety of strategies that children might use when attempting to gain entry into the play of other children, some of which might be more successful than others; and (c) items related to rate of engagement in conflict and conflict resolution strategies. I asked teachers to rate the degree to which children displayed specific behaviors on a 4-point Likert-type scale ranging from 1 (*rarely)* to 4 (*almost always).*

Walker et al. (2000) identified three factors in the measure, which they labeled aggressive or disruptive behavior, prosocial behavior, and shy or withdrawn behavior. They reported that the three factors demonstrated high internal consistency (Cronbach's α = .91, .86, and .59, respectively). Because the same factor structure may not fit the data for different populations of children, I preferred to use a factor structure derived from my data. Therefore, I conducted a factor analysis of the items to identify the relevant subscales for this sample.

Results

Theory-of-Mind Tasks

Pearson correlations revealed a strong relationship between children's performance on each of the theory-of-mind tasks (see Table 1). This result is consistent with previous findings (e.g., Gopnik & Astington, 1988; Taylor & Carlson, 1997). I examined gender and age group differences in performance on theory-of-mind tasks using analyses of variance. The dependent measure was the participant's aggregate theory-of-mind score. Using Wilks's Λ statistic, I found

TABLE 1. Correlations Between Theory-of-Mind Tasks

Variable	Change in location	Unexpected contents (self)
Change in location	—	—
Unexpected contents (self)	.40**	—
Unexpected contents (other)	.42**	.58**

**p = .01 (two-tailed).

significant main effects for both gender, $F(1, 110) = 4.93$, $p = .029$, and age group, $F(1, 110) = 16.29$, $p = .000$. I did not find significant interaction between age group and gender. My examination of group means revealed that girls scored higher than did boys on the total theory-of-mind score and that, as I expected, the older age group had higher scores than did the younger age group (see Table 2).

Profile of Peer Relations

Principal axis factor analysis. I confirmed the subscale structure of the measure with a principal axis factor analysis of the 25 items on the PPR. A 3-factor solution with orthogonal varimax rotation afforded the simplest, interpretable structure and explained 61% of the variance. Because of the sample size, I set a cutoff level for factor loadings at .40 (Stevens, 1996). All items had a factor loading that met this criterion. There was minimal cross loading of items across factors with only two items loaded above .40 on two factors. The first item (shares, takes turns) reflected an aspect of prosocial behavior and loaded at .68 on Factor 2 (including items that reflected prosocial behavior) and negatively at .48 on Factor 1 (including items that reflected aggressive and disruptive behavior). Therefore, I included this item on Factor 2. The second item (gives in or minimizes own requests in response to conflict) loaded at .64 on Factor 3 (including items that reflected less assertive behavior) and negatively at .44 on Factor 1 (including items that reflected aggressive and disruptive behavior). Therefore, I included this item on Factor 3. Table 3 shows the factor loadings for each item, item commonalities, and percentage of variance accounted for by each factor.

Factor 1 contained 9 items, which accounted for 22% of the variance and was similar to Walker et al.'s (2000) factor of aggressive or disruptive behavior. Items

TABLE 2. Means and Standard Deviations for Theory-of-Mind (ToM) Tasks, by Gender and Age Group

	Aggregate ToM score	
Gender	*M*	*SD*
*3- to 4-year-olds (*n = *53)*		
Boy (*n* = 25)	1.60	2.30
Girl (*n* = 28)	2.89	2.31
*4- to 5-year-olds (*n = *58)*		
Boy (*n* = 23)	3.65	2.14
Girl (*n* = 35)	4.23	1.99

loading on this factor reflected aspects of aggression, high engagement in conflict, aggressive conflict resolution strategies, and aggressive or disruptive group entry strategies. Giving in to conflict loaded negatively on this factor. Factor 2 contained 10 items, which accounted for 19% of the variance and was similar to Walker et al.'s factor of prosocial behavior. Items loading on this factor reflected aspects of prosocial behavior, cooperative behavior, positive responses to conflict, and competent group entry strategies. Factor 3 contained 6 items, which accounted

TABLE 3. Principal Axis Factor Analysis With Varimax Rotation for Profile of Peer Relationships (*N* = 111)

Item	F1	F2	F3	h^2
Factor 1: Aggressive or disruptive behavior (α = .91)				
High rate of conflict with peers	**.88**	0	–.13	.80
Threatens or insults peers	**.79**	0	0	.65
Becomes physically aggressive in response to conflict	**.84**	0	0	.76
Physical aggression (hits, pushes)	**.84**	0	0	.70
Verbal aggression (teasing, name calling)	**.74**	11	–.23	.61
Disruptive behavior	**.78**	0	–.12	.63
Frowns, argues	**.64**	–.15	–.15	.57
Attention seeking group entry approach	**.64**	.13	–.37	.60
Disruptive group entry approach	**.72**	.12	–.25	.64
Factor 2: Prosocial behavior (α = .89)				
Compromises in conflict	–.12	**.72**	.18	.58
Initiates and responds to conversation	.13	**.63**	0	.57
Cooperative play	0	**.81**	0	.67
Small group intimate play	.17	**.80**	0	.67
Shares, takes turns, helps	**–.48**	**.68**	.21	.74
Laughs, smiles	–.10	**.69**	–.24	.55
Group centered entry approach	.12	**.64**	–.22	.59
Direct group entry approach	.13	**.64**	–.23	.59
Successful entry attempts	.11	**.78**	–.30	.72
Popular with peers	.11	**.68**	–.16	.55
Factor 3: Shy or withdrawn behavior (α = .75)				
Gives in or minimizes requests in conflict	**–.44**	.11	**.64**	.64
Parallel play	0	0	**.52**	.28
Onlooker	–.19	–.24	**.74**	.68
Alone occupied	–.28	0	**.48**	.42
Alone unoccupied	0	–.15	**.64**	.54
Wait and hover entry approach	0	–.10	**.82**	.68
% of variance	**22**	**19**	**12**	

Note. Boldface identifies items with factor loadings ≥ .40.

for 12% of the variance and was similar to Walker et al.'s factor of shy or withdrawn behavior. Items loading on this factor included giving in or minimizing requests in response to conflict; less socially interactive behaviors, such as parallel play, onlooker, and alone; and more passive group entry behaviors. I calculated factor scores by summing the ratings for the items defining each factor and dividing by the number of items. Reliability (Cronbach's α) of the factor scores for aggressive or disruptive behavior, prosocial behavior, and shy or withdrawn behavior was .91, .89, and .75, respectively, which confirmed the reliability of this factor structure with the present sample.

Gender and age group differences. To examine the influence of gender and age group, I conducted a multivariate analysis of variance in which gender and age group served as the between-group variables. The dependent measures were the factor scores for aggressive or disruptive behavior, prosocial behavior, and shy or withdrawn behavior. Table 4 shows means and standard deviations relating to the dependent measures. Using Wilks's Λ statistic, I found significant main effects for gender, $F(3, 105) = 8.24$, $p = .000$, and for age group, $F(3, 105) = 12.67$, $p = .000$. However, these main effects were qualified by a significant Gender × Age Group interaction, $F(3, 105) = 3.49$, $p = .018$. Analysis of the significant higher order interaction using follow-up univariate tests revealed significant interactions for aggressive or disruptive behavior, $F(1, 110) = 8.60$, $p = .004$, and shy or withdrawn behavior, $F(1, 110) = 5.20$, $p = .025$. Figure 1 shows the Gender × Age Group interaction graphically. Examination of group means indicated that older boys were more likely than were younger boys to display aggressive or disruptive behavior and

TABLE 4. Means and Standard Deviations for Profile of Peer Relationships, by Gender and Age Group

	Profile of Peer Relationships					
	Aggressive or disruptive		Prosocial		Shy or withdrawn	
Gender	*M*	*SD*	*M*	*SD*	*M*	*SD*
	*3- to 4-year-olds (*n = *53)*					
Boy (*n* = 25)	1.40	.50	2.77	.61	2.07	.50
Girl (*n* = 28)	1.21	.37	2.67	.59	1.92	.59
	*4- to 5-year-olds (*n = *58)*					
Boy (*n* = 23)	2.01	.73	3.20	.45	1.68	.41
Girl (*n* = 35)	1.24	.48	1.68	.41	1.95	.44

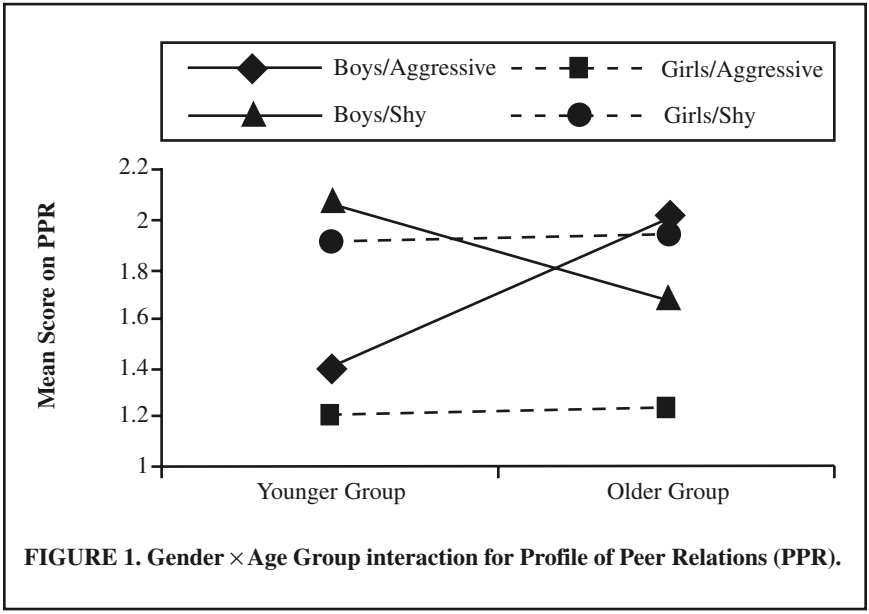

FIGURE 1. Gender × Age Group interaction for Profile of Peer Relations (PPR).

less likely than were younger boys to display shy or withdrawn behavior. This pattern was not evident for girls.

Profile of Peer Relations and Theory of Mind

I used correlational analyses to examine the relationship between theory of mind and teacher-rated social competence. Because of gender differences in theory of mind and teacher-rated social competence, I carried out correlations for each gender separately to determine whether the relationship between social competence, age, and theory-of-mind understanding differed for boys and girls. Examination of Pearson correlations revealed some moderately strong relationships between age, theory-of-mind understanding, and teacher-rated social competence (see Table 5). I found an expected positive relationship between theory-of-mind ability and age for both boys and girls, which indicated that older children were more proficient on the theory-of-mind tasks; however, the relationship was stronger for boys. For boys, there was a significant positive relationship between theory-of-mind ability and aggressive or disruptive behavior and a negative relationship between theory-of-mind ability and shy or withdrawn behavior, which indicated that teachers rated boys who were more proficient on theory-of-mind tasks as more likely to display aggressive or disruptive behavior and less likely to display shy or withdrawn behavior. For girls, there was a significant positive relationship between theory-of-mind ability and prosocial behavior indicating that girls who were more proficient on theory-of-mind tasks were more likely to display prosocial behavior.

TABLE 5. The Relationship Between Age, Theory of Mind, and Teacher-Rated Social Competence

Variable	Theory-of-mind score	
	Boy (n = 48)	Girl (n = 63)
Aggressive or disruptive behavior	.46**	–.16
Prosocial behavior	.26	.39**
Shy or withdrawn behavior	–.37*	–.17
Age	.43**	.30*

*p = .05 (two-tailed). **p = .01 (two-tailed).

I tested the significance of the difference between these correlations for boys and girls using Fisher's z transformation. The difference between boys and girls was significant for aggressive or disruptive behavior ($z = 3.369$) but not for prosocial ($z = -0.743$) or shy or withdrawn behavior ($z = -1.374$).

To test the relative contributions of age and theory-of-mind ability to peer-related social competence, I performed a multiple regression analysis. Because of the differential correlational relationships for each gender, I conducted the regression analyses separately for boys and for girls. For boys, I entered age first with teacher ratings of aggressive or disruptive behavior as the dependent variable. Age accounted for 20% of the variance ($R^2_{adjusted} = .19$) and significantly predicted teacher-rated aggressive or disruptive behavior, $F(1, 46) = 11.635$, $p = .001$. I then entered total theory-of-mind score on the second step, which significantly added to the prediction of teacher-rated aggressive or disruptive behavior, $R^2_{change} = .09$; $F(1, 45) = 5.69$, $p = .021$. The final regression equation accounted for 29% of the variance ($R^2_{adjusted} = .26$) to significantly predict teacher ratings of boys' aggressive or disruptive behavior, $F(2, 45) = 9.26$, $p = .000$.

For girls, I entered age first with teacher ratings of prosocial behavior as the dependent variable. Age accounted for 23% of the variance ($R^2_{adjusted} = .22$) and significantly predicted teacher-rated prosocial behavior, $F(1, 61) = 18.403$, $p = .000$. I then entered total theory-of-mind scores on the second step, which significantly added to the prediction of teacher-rated prosocial behavior, $R^2_{change} = .06$, $F(1, 59) = 5.43$, $p = .023$. The final regression equation accounted for 29% of the variance ($R^2_{adjusted} = .28$) to significantly predict teacher ratings of girls' prosocial behavior, $F(2, 61) = 12.595$, $p = .000$. Table 6 shows the results of the regression analyses.

Discussion

In this study, I examined three main issues: (a) the nature of individual differences in children's peer-related social behavior, (b) the individual

TABLE 6. Predictive Models of Peer-Related Social Behavior

Regression model	β	R^2	ΔR^2
	Boy (n = *48)*		
Criterion variable: Aggressive or disruptive behavior			
Step 1: Age	.449**	.202**	
Step 2. Theory-of-mind score	.331*	.291*	.090*
	Girl (n = *63)*		
Criterion variable: Prosocial behavior			
Step 1: Age	.484**	.235**	
Step 2: Theory-of-mind score	.266*	.299*	.064*

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

differences in children's understanding of theory of mind, and (c) the relationship between these two variables. Overall, my results supported the notion that individual differences in theory-of-mind understanding are related to important aspects of social behavior; however, it also seems that this relationship differs for boys and girls.

Teacher-Rated Social Behavior

With respect to gender differences, teachers rated boys as more likely than girls to engage in aggressive or disruptive behavior, although not less likely to engage in prosocial behavior. Overall, these results provide support for the results of other researchers. Both observational and teacher reports indicated that by the age of 2 or 3 years boys consistently exhibited more physical and verbal aggression than did girls (Coie, Dodge, & Coppotelli, 1982; Maccoby & Jacklin, 1980; Walker, 2004). With respect to age differences, both older boys and older girls were rated as displaying more prosocial behavior than were younger boys and younger girls; teachers also rated older boys as significantly more likely than younger boys to engage in aggressive or disruptive behavior and less likely than younger boys to display shy or withdrawn behavior. These age differences were not evident for girls.

Because of the cross-sectional nature of this study, I was not able to determine changes in social behavior over time; however, one could speculate that the higher rates of aggressive or disruptive behavior and lower rates of shy or withdrawn behavior displayed by older boys are an adaptive response to interactions

within male peer groups. In other words, socialization to peer group norms during the kindergarten year (3- to 4-year-old group) may act to discourage shy or withdrawn behavior, whereas it may emphasize dominance as important for young boys. Thus, overt aggression in conjunction with high levels of prosocial behavior may be not only acceptable for boys at preschool age (4- to 5-year-old group) but positively valued as a means of establishing their social position if it is used in the service of standing up for themselves. In later school years, it is likely that such overt aggressive behavior becomes nonnormative and that dominance hierarchies are established more subtly.

Individual Differences in Theory of Mind

The developmental trends noted in my results are consistent with those obtained by other researchers (e.g., Wellman et al., 2001). To be specific, older children—both boys and girls—were more competent in their performance on the false-belief tasks. The gender differences in theory-of-mind understanding were also in the expected direction. Researchers have suggested that there may be important gender differences in the ways in which children think about social problems and solve interpersonal conflicts (e.g., Miller, Danaher, & Forbes, 1986; Musun-Miller, 1993; Walker et al., 2002); however, few investigators have specifically examined gender differences in theory-of-mind understanding. In one exception, Charman et al. (2002) found weak gender differences in false-belief understanding in children of a similar age to those in the present sample (3- to 5-year-old children). The gender differences apparent in the present study supported and extended Charman et al.'s findings and indicated that preschool-aged girls are more competent than are preschool-aged boys on theory-of-mind tasks involving false belief.

However, one of the limitations of the present study is that I did not include a measure of receptive language ability. Because of the increasing evidence of strong correlations between the ability to pass theory-of-mind tasks and oral language competence (e.g., Astington & Jenkins, 1999; Cutting & Dunn, 1999; Happé, 1995), the effect of verbal ability on the relationships reported here should be investigated in follow-up studies. It is possible that the gender differences evident in the present study may be, at least in part, a reflection of girls' greater facility with tasks related to oral language ability.

Theory of Mind and Peer-Related Social Competence

Researchers have indicated that the development of theory-of-mind understanding is related to important aspects of social behavior (Astington & Jenkins, 1995; Dunn et al., 1991; Dunn & Cutting, 1999; Jenkins & Astington, 2000; Schwebel et al., 1999; Taylor & Carlson, 1997). For example, success on false-belief tasks has been linked to popularity with peers (Dennis & Slaughter, 2000) and to the production of prosocial behavior (Watson et al., 1999). My results in

the present study supported the previous work with respect to girls; however, I did not expect the results for boys. To be specific, teachers rated boys who were more proficient at false-belief tasks as more likely to engage in aggressive or disruptive behavior. However, production of prosocial behavior was related to theory-of-mind ability for girls. The present results therefore suggest that the relationship between theory-of-mind understanding and peer-related social competence is by no means straightforward.

Development of the underlying cognitive ability to understand that others have thoughts, feelings, desires, and intentions different from one's self (theory of mind) may be related to social competence; however, it does not seem to be necessarily related to the production of prosocial behavior. The notion that theory-of-mind ability may be used to engage in either positive or negative social interactions has been proposed with respect to peer-nominated controversial children who engage in high levels of both positive and negative social behaviors (e.g., Browitt & Sanderson, 2001). There is also some evidence that manipulative ability, which implies a more advanced understanding of the mind, is related to dominance in preschool-aged children (Keating & Heltman, 1994). Therefore, it is possible that the preschool-aged boys in the present study who showed evidence of a greater understanding of theory-of-mind ability may have been more likely to engage in behaviors that were socially successful for boys in preschool settings. In support of this notion, older boys in the present study displayed more prosocial behavior than did younger boys, and they also displayed more aggressive or disruptive behavior and less shy or withdrawn behavior. The significant differences between older and younger boys with respect to aggressive or disruptive behavior and shy or withdrawn behavior suggests that the higher rates of aggressive or disruptive behavior displayed by the older boys may be adaptive for preschool-aged boys. Researchers who have studied preschool-aged children have indicated that, whereas aggression is linked to unpopular social status for preschool-aged girls, aggressive or disruptive behavior does not seem to distinguish between social status groups for preschool-aged boys (Walker et al., 2002).

Howes (1988) defined social competence as behavior that reflects (a) ability to socially function with peers, (b) ability to achieve personal goals, and (c) sensitivity to peer communication. However, processing of social cues seems to be related to the social context and the social partners available (Maccoby, 1990). During the preschool years, gender identity and gender role preferences are undergoing rapid development as children gradually come to acquire the behaviors and attitudes considered appropriate for their biological gender (Serbin, Powlishta, & Gulko, 1993). Therefore, it is possible that competent behavior and successful social cognitive functioning may be defined differently for boys and girls at preschool age. Gender-specific behaviors and styles of social interaction may play a role in the relationship between theory-of-mind ability and peer-related social behavior in that the skills required, and the behaviors regarded as competent, may

differ according to the social norms and expectations regarded as important for boys or girls by their peers. Thus, as early as 4 or 5 years old, boys and girls may have different profiles of socially competent behavior.

The participants in the present study attended community preschools and kindergartens. These programs serve 3- to 4-year-old children in the kindergarten program and 4- to 5-year-old children in the preschool program. Because of the nature of these programs, it is likely that the kindergarten year was, for the majority of children in the center, their first experience in a group setting. Therefore, the higher rates of aggressive or disruptive behavior displayed by the boys in the preschool program may be less a function of developmental factors than a result of socialization into male peer groups within which more assertive, dominant behavior may be effective and even positively regarded.

Conclusion

The results of the present study emphasize the importance of gender as a social category, which may not only influence the types of social–cognitive skills that are relevant to social competence for boys and girls but also the social goals that they select as important. The findings that the ability to understand false belief, and thus demonstrate an understanding of theory of mind, was linked to higher levels of aggressive or disruptive behavior for boys suggested that the social goals selected by boys may be more related to dominance than conciliation. The results indicated that any interventions aimed at improving children's ability to understand the mental states of others may not necessarily result in a decrease of aggressive or disruptive behavior and a corresponding increase in prosocial behavior. Thus, if interventions aimed at improving children's peer-related social competence are to be effective, there may be a need to combine theory-of-mind training with training in positive prosocial behaviors and, perhaps most important, a need to take children's social goals into consideration.

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