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Sixty-four kindergarten children participated in a bead-collecting game. Their competitive, noncompetitive, and other moves were measured. Gender and gender composition of the group affected competition in the context of playing this game with known peers. The boys were more competitive than the girls. Girls in the same-gender groups, but not mixed-gender groups, had low levels of competitive moves overall. Similar rates of strategic moves and game understanding suggest that the noted gender differences were not due to lack of game skill. However, the experience of playing the game can differ for boys and girls, and this difference may be emphasized when girls are playing exclusively with other girls.

Competition is a widespread but not universal goal (Bonta, 1997). Competition is not the only means for achieving one's goals. Individuals may act cooperatively, reaching for goals jointly with others, or goal achievement can be independent of the achievement of others (Bonta, 1997). Moreover, individuals who use competition under some circumstances may not compete under other circumstances. Therefore, the emergence of competition in early childhood is unlikely to be uniform in nature. Gender, group gender composition, age, group size, familiarity with group members, and resource

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scarcity are some of the factors that may contribute to shaping children's competitive interactions (e.g., Benenson, Nicholson, Waite, Roy, & Simpson, 2001; Green, Cillessen, Berthelsen, Irving, & Catherwood, 2003; Schmidt, Ollendick, & Stanowicz, 1988). In the current study, competition was examined with attention to the role of gender and gender composition in a group game-playing context with 5-year-old children.

Gender differences in young children's group size and play styles have been well documented (Maccoby, 1998). Typically girls arrange themselves in small groups of two or three with play that is relatively cooperative, whereas boys congregate in larger groups and are more likely than girls to be involved in direct competition with each other. More extreme and stereotypical behavioral differences between preschool boys and girls have been observed when boys and girls play in same-gender groupings (Fabes, Martin, & Hanish, 2003). For example, girls were involved in less active forceful play in the context of playing with other girls than when they played with boys. Differences in social behavior according to the gender of one's play partner have been found in children as young as 33 months old (Jacklin & Maccoby, 1978).

Yet in controlled experiments examining early competition jointly with cooperation, gender differences have not been consistently demonstrated. Green et al. (2003) investigated the effect of gender composition and social competency on competitive and cooperative behavior in a movie-viewing task with unfamiliar 6-year-olds. Only one child at a time was able to look through an eyepiece to see a movie while two other children assisted by operating the apparatus. The authors found that the gender composition of groups appeared to be more influential in children's behavior than did their social competency ratings. Boys achieved more viewing time than girls but only in mixed-gender groups. Notably, girls had more movie-viewing time in same-gender groups as compared with girls in the mixed-gender groups. Conversely, boys had less individual viewing time in same-gender groups as compared with mixed-gender groups. This is consistent with previous research using this paradigm with preschool children; successful access to the desired resource was similar for boys and girls in same-gender groups but not mixed-gender groups (Charlesworth and Dzur, 1987; Charlesworth & LaFreniere, 1983; LaFreniere & Charlesworth, 1987). The gender difference in movie-viewing time found solely in the mixed-gender sessions suggest that gender composition can play an important role for young children in a task that jointly involves competition and cooperation.

Research addressing gender differences in strictly competitive situations has focused on older children in athletic contexts. In one study researchers measured and controlled for skill differences in young adoles-

cent (i.e., 12-year-olds) competitors in order to investigate female inhibition during competition (Weisfeld, Weisfeld, & Callaghan, 1982). Groups of boys and groups of girls initially played dodge ball with other groups of boys and girls to determine their skill level (i.e., high or low). Teams were then grouped by level and gender and played three more games. Each group competed against a same-gender group (but different skill level) and two cross-gender groups (one with the same skill level and the other with a different skill level). As the authors predicted, the individual performance of girls was lower when playing against boys as compared with playing against other girls. This pattern was evident even in the case of high-skilled girls playing against low-skilled boys. The girls inhibited their competitive behavior when faced with direct physical competition against boys regardless of their opponents' skill level. This particular form of physical competition involves throwing balls at one's opponents and may be particularly intimidating for girls when they are matched against boys.

In another study involving athletic activity, the researchers compared individual performance in competitive and noncompetitive conditions and found some meaningful gender differences (Gneezy & Rustichini, 2004). The impact of competition on the running time of fourth-grade children (i.e., 10-year-olds) differed for boys and girls even though their initial running time when running alone (noncompetitively) was not significantly different. The running times for boys improved under competitive conditions (where they ran with one other instead of running alone). The running times for girls declined in competitive running conditions as compared to when they ran alone. The gender of one's competitor did not influence the running time for boys, but it did influence the running time for girls. In the competitive condition, girls' running times were relatively better when they ran against boys as compared with running against other girls. As in other studies, the gender of one's opponent mattered at least to the girls. But this study differed from the movie-viewing studies and the dodge ball study because girls performed at higher levels when paired with boys as compared to when they were paired with girls. Thus, the impact of gender composition is not uniform across studies.

Nonathletic game playing has been a fruitful context for studying competition with a wider age range of children. The following paradigm has been used with children in kindergarten, first grade, and fourth grades. In a study using a bead-collecting game, Benenson et al. (2001) examined the effect of group size on competition with kindergarten and first-grade children (i.e., 6- and 7-year-olds). In this game, children had turns collecting beads from either a common pile (i.e., noncompetitive moves) or from another player (i.e., competitive moves). Children in groups of four made

more competitive moves than children in groups of two. There were no differences in competitive moves based on gender or age alone. Nevertheless, there was a gender by group size interaction whereby boys in the large groups were more competitive than any of the other groups. Unfortunately, because male and female competitive behavior was only measured in same-gender groups, it is unknown whether there would have been gender differences in the context of mixed-gender groups.

A similar pattern of results with only limited gender effects was found in another bead-collecting study (Roy & Benenson, 2002). In this study, kindergarten children and fourth-grade children played games under two conditions, one in which each child completing the bead game would get a certificate (plenty condition) or only the first child completing the game would receive the certificate (scarcity condition). The researchers predicted that lower levels of competition would occur for girls and younger children and in conditions of plenty. The results indicate that there were no differences in competitive moves based on gender, age, or scarcity alone. There was a three-way interaction with the older girls in the resource-plenty condition having significantly reduced levels of competitive moves. Once again the groups that were formed were exclusively male or female groups. Therefore, it is unknown if there would have been gender differences in mixed-gender groups.

In the current study, we examined the effect of both gender and gender composition on competitive game-playing behavior in kindergarten children. We modeled our game on the one developed by Benenson et al. (2001). This game has been useful in measuring competitive behavior in children in early and middle childhood. We selected kindergarten children to be studied since they were the youngest children to consistently display competitive behavior using this paradigm (Benenson et al., 2001; Roy & Benenson, 2002). We also selected a group size of four children, because Benenson et al. found more competition when children were in groups of four than in groups of two. We hoped to test the following hypotheses. The first hypothesis was that boys would have higher levels of competitive moves than girls. This is consistent with Benenson et al.'s (2001) study that found boys to be more competitive than girls.

The second hypothesis was that there would be a higher rate of competitive moves in the mixed-gender groups as compared with same-gender groups. This hypothesis was more speculative since studies focusing solely on competition with young children have not simultaneously compared same-gender and mixed-gender groups. Fabes et al. (2003) saw preschoolers' play behavior in mixed-gender groups to be less stereotypically bound than play in same-gender groups. This is consistent with part of our predic-

tion; we expected girls to be less inhibited in their competitive play in mixed-gender groups than in same-gender groups. Also, in our pilot research with a small sample (N = 11) of kindergartners, we found that both boys and girls had higher levels of competitive moves in the mixed-gender group as compared with the same-gender groups (Stein & Weinberger, 2004).

In addition to these two hypotheses, we wanted to more closely examine the nature of competitive moves, a topic that has not been examined in past studies. Therefore, the following research questions were exploratory. First, were the competitive moves strategic moves? Strategic moves are moves that maximize a player's chances of winning, in this case by taking beads from the player in the lead. Second, were boys and girls equally strategic? Third, did group gender composition influence the rate of strategic moves? Finally, if the moves were not strategic, what else may have directed the children's moves? One possibility is that children make nonstrategic selections to retaliate against players who had previously taken their beads. A second reason for nonstrategic moves is that children may not understand that strategic moves can improve their chances of winning the game. Another option is that nonstrategic moves are carried out against disliked peers and within the context of mixed-gender groups against cross-gender peers. In order to examine these questions, the specific target location of the bead selections was tracked. Also, postgame interviews were conducted to determine children's understanding of the game and their ratings of the other players.

Method

Participants

Thirty-two girls (M = 5.8 years, SD = .39) and 32 boys (M = 5.7 years, SD = .33) from three kindergarten after-school programs in southern New England participated in this study. The sample composition reflected racial and ethnic diversity. Based on parental reports, 52% of the sample was identified as White, 14% as Latino or Hispanic, 8% as Cape Verdean, 6% as Black or African American, 6% as multiracial or other, and 16% as undisclosed. Nine of 10 children whose racial or ethnic heritage was not disclosed came from an after-school program with a high population of children of color. The percentage of non-White participants is therefore likely to be higher than the above numbers indicate.

Children whose parents previously signed consent forms and were present on the day of data collection were randomly invited to participate in

the study. Each child participated within a group of 4 children. Eight of 16 groups were same-gender groups (4 all-female groups and 4 all-male groups), and the remaining groups were mixed-gender groups (8 groups with 2 girls and 2 boys each).

Procedure

Children were brought to an available rectangular table where the materials were set up in advance. A researcher greeted the children and then stood behind the video camera to record the test session. A second researcher directed the children to their seats and joined them at the table. For the mixed-gender groups, boys and girls sat in alternating seats with cross-gender children across and next to them. After the children were seated they were given instructions about the game, and one practice round was played. The researcher asked the children if they had any questions about the game before and after the practice round. For each group, a different child had the first turn in the game than in the practice round. In the mixed-gender groups, the gender of the child who had the first turn during the practice round was alternated for the game. In four of the mixed-gender groups a boy had the first turn, and in the remaining four groups a girl had the first turn. Also, boys and girls took alternating turns during the game.

The bead-collecting game was adapted from the one used by Benenson et al. (2001). Each child playing the game had a bead-collecting stand made with an upright dowel attached to a small stand. The children took 10 turns rolling a die with the numbers 1 through 3, indicating the number of beads they were allowed to take and place on their own dowels. For each turn, children were allowed to take their beads from a common bowl placed in the middle of the table (i.e., noncompetitive move) or from any of the other players (i.e., competitive move). Prior to the first round of the game, each child placed three beads on their dowel to provide an opportunity for other players to make competitive moves from the start of the game. When 10 rounds were completed, the researcher placed the bead stands together to determine the winner of the game. The winner was announced and congratulated. Then the other researcher escorted the children to another table to draw pictures while the primary researcher selected children for brief solitary interviews. During the interview the game winners were given certificates for winning the game, and all children were given stickers for playing the game. The researcher asked questions to ascertain if the children understood the game and its strategies. In addition, the researcher asked the children how much they liked to play with each other. For one of the mixed-gender groups only six rounds were completed because a child was picked

up early by the parent. The game was ended in the same way, and all but the departing child completed the interview.

Measures

The game was video recorded for later scoring. A research assistant was trained to score each player's turn. The scorer recorded how many beads each player took for every move and which player the beads were taken from or if the beads were taken from the common bowl. A second trained scorer reviewed the video recordings of 25% of randomly selected game sessions. The two scorers had 100% agreement with respect to the number of beads taken and the location of where the beads were taken from for each turn of these four game sessions.

Noncompetitive and competitive moves. Each time a child selected a bead from the common bowl, the move was scored as noncompetitive. If a child selected a bead from another child's bead stand, the move was scored as competitive.

Strategic and nonstrategic moves. Competitive moves were also scored as strategic or nonstrategic. A move was scored as strategic if a child took beads from a player in a lead position. Children were allowed to count and compare their bead collections during the game. If the lead position was held by the child taking a turn, then the move was scored as strategic if the child took beads from a player with the next highest number of beads. The move was scored as nonstrategic if beads were taken from any other player.

Retaliatory moves. Competitive moves were also scored as retaliatory or nonretaliatory. A move was scored as retaliatory if a child took beads from a player who had taken the child's beads in the preceding round. Fifty percent of the retaliatory moves were also strategic, and the remaining retaliatory moves were nonstrategic.

Game understanding. In the postgame interview the researcher asked each child individually about how the game was played. The researcher set the bead stands on the table with one stand in the lead, two stands having an equal number of beads, and one stand having the fewest beads. The child was then shown a middle-level bead stand and was asked where would be the best place to take the beads from if he or she wanted to win the game. If a child answered "the bowl," the researcher removed the bowl of beads and repeated the question, indicating that the child needed to pick one of the bead stands. These questions were used to determine if each child understood that winning the game was more likely if beads were taken from the player in the lead. A child was scored as having game understanding if he or she selected the dowel in the lead either initially or after the bowl was removed.

Peer ratings. In the postgame interview the researcher asked each child privately about the other children playing the game. The children were asked to rate how much they liked to play with each of the other three children. Their choices were rated on a scale from 1 to 3 (1 = not at all, 2 = pretty much, 3 = a lot).

Results

Research conducted in groups provides the potential for nonindependence of responses among research participants (Kenny, Mannetti, Piero, Livi, & Kashy, 2002). It has been recommended that when nonindependence of responses occurs, the focal analysis should be group-level analysis rather than individual-level analysis found in nongroup research. The degree and the direction of group members influencing one another can be examined with intraclass correlation coefficients (ICCs). Therefore, ICCs were computed for the three primary dependent variables across the 16 groups of participants. With respect to competitive moves, the ICC was not significantly different from zero (–.052). This indicates that nonindependence of competitive moves within groups is unlikely. Therefore, the individual-level analysis is appropriately applied here.

The primary analyses were conducted to test the two hypotheses that predicted that boys would have higher levels of competitive moves than girls and that there would be a higher rate of competitive moves in the mixed-gender groups as compared with same-gender groups. Thus, in order to test the effect of gender and gender composition on the rate of competitive moves, a 2 (gender) × 2 (gender composition) ANOVA was conducted. As expected and shown in Table 1, boys had a significantly higher rate of competitive moves as compared with girls ($F[1, 60] = 36.90$, $p < .05$). Every boy had at least one competitive move during the game, while only 19 (59%) of the girls had at least one competitive move. The analysis also revealed that there were significantly more competitive moves in the mixed-gender groups as compared with the same-gender groups ($F[1, 60] = 19.80$, $p < .05$). These effects are primarily explained by the significant gender by gender composition interaction ($F[1, 60] = 31.58$, $p < .05$). The lower rate of competitive moves in same-gender groups as compared with mixed-gender groups was found for girls but not boys.

In addition to the above hypotheses, we had several exploratory research questions examining competitive moves more closely. The first question was whether competitive moves were strategic moves. Only 51% of competitive moves were strategic in nature. We also asked if boys and girls were equally strategic and whether gender composition influenced the

Table 1. Mean Proportion of Competitive, Strategic, and Retaliatory Moves

	Same-Gender		Mixed-Gender		Total	
	M (SD)	N	M (SD)	N	M (SD)	N
Competitive moves						
Boys	.87 (.15)	16	.79 (.28)	16	.83 (.23)	32
Girls	.12 (.27)	16	.76 (.30)	16	.44 (.43)	32
Total	.49 (.44)	32	.78 (.29)	32	.64 (.39)	64
Strategic moves						
Boys	.49 (.26)	16	.50 (.26)	16	.50 (.25)	32
Girls	.53 (.32)	4	.53 (.18)	15	.53 (.21)	19
Total	.50 (.26)	20	.52 (.22)	31	.51 (.24)	51
Retaliatory moves						
Boys	.42 (.18)	16	.31 (.17)	16	.36 (.18)	32
Girls	.17 (.15)	4	.34 (.16)	15	.30 (.17)	19
Total	.37 (.20)	20	.32 (.16)	31	.34 (.18)	51

Note. Only competitive moves can be scored as strategic or retaliatory.

rate of strategic moves. In order to test the effect of gender and gender composition on the rate of strategic moves, a 2 (gender) × 2 (gender composition) ANOVA was conducted. The analysis revealed that for strategic moves there were no main effects for gender ($F[1, 47] = .177$, $p > .05$), gender composition ($F[1, 47] = .001$, $p > .05$), or interaction ($F[1, 47] = .004$, $p > .05$). As shown in Table 1, it is clear that even though boys make more competitive moves, the competitive moves of girls are equally strategic across group contexts. With respect to nonindependence of strategic moves, the ICC was not significantly different from zero (.003). This indicates that nonindependence of strategic moves within groups is unlikely. Therefore, focusing on individual-level analyses is appropriate.

In our final research question we asked what else may have directed children in making their moves if moves were not strategic. One possible motivation is retaliation; players may have chosen to take beads from opponents who had previously taken beads from them. Thirty-four percent of competitive moves were retaliatory; specifically, the players took beads from opponents who had taken their beads in the prior round. On average, 56% of moves were preceded by one or more opponents taking their beads. Both the number of rounds that a player was targeted and the number of times a player was targeted were positively associated with retaliatory

moves (i.e., rounds targeted, one-tailed Pearson correlation coefficient ρ = .69, $p < .001$; times targeted, one-tailed Pearson ρ = .75, $p < .001$). To explore whether there was a gender or gender-composition effect for the rate of retaliatory moves, a 2 (gender) × 2 (gender composition) ANOVA was conducted. As seen in Table 1, there were no main effects for gender ($F[1, 47] = 3.87$, $p > .05$) or gender composition ($F[1, 47] = .25$, $p > .05$). However, there was a gender by gender composition interaction effect ($F[1, 47] = 6.15$, $p = .02$). Girls in same-gender groups had proportionately fewer retaliatory moves than did all other groups. With respect to nonindependence of retaliatory moves, the ICC was not significantly different from zero (–.234). This indicates that nonindependence of retaliatory moves within groups is unlikely. Therefore, focusing on individual-level analyses is appropriate.

A second reason for making nonstrategic moves may have been a lack of game understanding. In the postgame interview, a large majority (i.e., 79%) of the children correctly selected taking beads from the dowel in the lead position as the best way to try to win the game. An additional 11% selected the dowel in the lead position when the common bowl was removed as a choice. Selecting the dowel in the lead position as one's initial choice for the postgame interview was not associated with having more strategic moves (one-tailed Spearman's rank correlation coefficient ρ = .044, $p > .05$). There was no gender difference in how frequently the lead position versus any other position was selected (two-tailed Fisher Exact test, $p > .05$).

An additional reason for nonstrategic moves may have been that children prefer to take beads from disliked peers and in the case of mixed-gender groups may prefer to take beads from cross-gender peers. Therefore, competitive moves were examined in relation to peer ratings and gender. The range of rating options was limited (i.e., on a scale from 1 to 3) and both boys (M = 2.39) and girls (M = 2.4) rated peers highly. Many of the strategic (60%) and nonstrategic (58%) moves were against peers who were given the highest rating as compared with the two lower ratings. Notably, peers with the lowest ratings were more frequently the target of strategic moves in mixed-gender groups (M = 26%) as compared with same-gender groups (M = 11%; Univariate ANOVA, $F[1, 46] = 4.37$, $p = .04$). This is the case even though the average peer ratings in these two groups were both high (i.e., mixed-gender, M = 2.32; same-gender, M = 2.47). For nonstrategic moves, the data followed a similar but nonsignificant pattern of more moves against poorly rated peers in the mixed-gender groups (M = 24%) than the same-gender groups (M = 14%; Univariate ANOVA, $F[1, 46]$ 1.57, $p > .05$). Opponent ratings did not appear to be especially influential in directing players' moves.

In mixed-gender groups, competitive moves were additionally examined in relation to opponent gender. On average, children made cross-gender bead selections in 74% of their competitive moves. However, two of the three possible targets are cross-gender opponents. Similarly, 73% of the competitive moves that were strategic were made against cross-gender players. This rate is similar for girls (M = 76%) and boys (M = 71%). The highest rate of cross-gender moves were nonstrategic moves made by boys (M = 81%), and the lowest rate of cross-gender moves were nonstrategic moves made by girls (M = 69%). However, their rate of cross-gender moves was not significantly different from each other ($t[28] = 1.41$, $p > .05$). Opponent gender does not appear to be especially influential in directing the target of a player's moves.

Discussion

As predicted, kindergarten boys had more competitive moves than girls. Notably, low levels of competition for girls were found only in the same-gender groups. Moreover, when girls competed they were less likely than boys to retaliate, yet girls played as strategically as the boys. As this and other studies demonstrate, the context affects when gender differences in competition occur.

The results differ to some extent from the Roy and Benenson (2002) study that found that kindergarten boys and girls had similar levels of competitive moves across two competitive contexts. However, the impact of context did affect the older fourth-grade girls in their study. Only fourth-grade girls and not same-age boys and kindergarten boys and girls had low levels of competitive bead-collecting moves in the plenty condition but not the scarcity condition. In the current study, all children received stickers; only the winners received certificates. The girls in the same-gender groups in the current study responded as only the older girls in the plenty condition did in the Roy and Benenson study. The boys in the current study had relatively high levels of competitive moves across group contexts. This consistency of competitive behavior for boys has not always been demonstrated in previous research. For example, lower levels of competitive moves were made when young boys played the bead game in dyads instead of groups of four (Benenson et al., 2001). Taken together, the context of competition affects the extent of competitive behavior for both boys and girls.

Why might gender composition of the group influence the girls and not the boys in the current study? Benenson and Heath (2006) have suggested that when both boys and girls are invested in competitive tasks, girls in groups may have a double agenda affecting their task performance. The

authors found that at least for older boys and girls (i.e., 10-year-olds) the same level of effort was exerted in a competitive word-generation task. However, in same-gender groups, as compared with dyads, girls withdrew and underperformed. Girls may have been searching for a partner as a way to perform the task effectively and with intimacy, unlike boys in a group context who were able to focus solely on the task. To some extent this parallels the current study. Young boys and girls were equally competitive in mixed-gender groups. Opportunities for connectedness may have been clear when only one other same-gender peer was present. When three same-gender peers were available to choose among, the competitive agenda may have been diminished, at least for the girls.

Another dimension that may help to explain the pattern of findings in this study comes from research findings that boys and girls in same-gender groups were equally competitive and strategic in the process of picking out a group leader (Benenson, Roy, Waite, Goldbaum, Linders & Simpson, 2002). In spite of this performance similarity, the level of observed discomfort in groups of four kindergarten girls or four fourth-grade girls was higher than what was observed in groups of boys. The gender difference in discomfort was seen again in the authors' second competition study with same-gender dyads playing games. Girls displayed more discomfort than boys before and after the game winner was announced. However, boys and girls had similar levels of discomfort while actually playing the games. A unique aspect of the game was that a barrier was placed between the players during the competition. The greater discomfort for girls was seen when the barrier was not in place. The authors argued that direct competition may be more emotionally taxing on girls than it is for boys. The authors suggested that additional research is needed to see if the level of discomfort for girls would remain, diminish, or even disappear if they were also tested in mixed-gender dyads and groups.

A study by Geary, Byrd-Craven, Hoard, Vigil, and Numtee (2003) suggests that girls, more so than boys, experience emotional distress when faced with group conflict. The authors indicate that unresolved conflicts have led to more instability in relationships with girls than boys and that there is a greater need for girls to invest in conflict resolution. Perhaps girls in the current study were attending to the risks involved if conflict arose when competing with three other girls. If so, this may have inhibited their competitive and retaliatory moves. As with discomfort, children's concerns about the outcomes regarding conflict were not measured here. We can only speculate that girls in the same-gender groups were experiencing more concerns or discomfort in this context than the children in the other contexts. In future research it would

be useful to examine which aspects of competition may be distressing for girls and for boys.

The mechanisms that sometimes led to low levels of competitive moves in this study may have also led to low levels of retaliatory moves. Kindergarten and first-grade children have been shown to ascribe retaliation involving at least teasing and hitting with negative emotional outcomes, such as victim sadness (Smetana, Campione-Barr, & Yell, 2003). Older children (i.e., second through fourth graders) were especially inclined to condemn retaliation. Recent research assessing child and adolescent expectations following physical and social aggression revealed that boys made consistently high predictions of hostile reactions to aggression across contexts (i.e., size of group and compatibility of group) (Benenson, Sinclair, & Dolenszky, 2006). Girls, however, expected hostile reactions to aggression primarily in the context of compatible same-gender dyads. The girls appeared to perceive more risk of hostility in the context of closeness. In the current study girls in the same-gender groups rarely competed, and when they did they retaliated against other players at the lowest levels in the study. The same-gender groupings may be considered the riskiest for retaliation even for these young girls. Perhaps these girls were especially concerned with the consequences of retaliation (i.e., either sadness or hostility) when faced with three other girls with whom they are most likely to have had compatible relationships prior to playing the competitive game.

The boys in the current study may have also considered the risks of retaliation. Interestingly, their highest rate of retaliatory moves was found against the lowest-rated peers in mixed-gender groups. The potential risks in using retaliatory moves may have been considered the lowest when playing against less familiar (due to gender) and less liked peers (according to ratings). Thus, even boys may be guarded in their use of retaliation. Nevertheless, it appears that girls in same-gender groupings may perceive a generally higher cost, rather than benefit, to both competing and retaliating in this game. The children in the current study knew that when the game was over they would return with their peers to their classrooms. Any short-term benefit to winning the game could be weighed against the potential disruptions to their relationships with others. The greater instability of girls' relationships as discussed by Geary et al. (2003) suggests that unfavorable actions may have a higher cost in a same-gender context as compared with a mixed-gender context for girls.

In spite of any differences in competitive moves and retaliatory moves, boys and girls were equally strategic in this study. While the children appeared to be interested in the prospect of winning the game, only about half

of the competitive moves were strategic. Neither opponent gender in mixed-gender groups nor opponent peer ratings provide alternative explanations for nonstrategic play. The children in each group knew each other as peers from the same after-school program, and they rated each other highly. The friendly atmosphere while playing the game may have deterred children from becoming overly zealous in their pursuit to focus narrowly on a strategic agenda. One exception to this involved poorly rated peers (i.e., those with the lowest rating). There were more strategic moves against poorly rated peers in the mixed-gender groups, where children may have been less familiar to each other, as compared with the same-gender groups. Future research examining how unknown peers, known peers, and friends play against each other is needed to better understand children's game-playing choices.

Game understanding, as it was measured here, was relatively high and not associated with the rate of strategic moves. Yet the nuances of playing a highly strategic game may have been beyond the cognitive capacity of these young children. Playing such a game requires maintaining an elevated level of attention and accuracy regarding the status of not only one's own bead stand but that of three other players as well. A closer examination of children's abilities to play the game most strategically is needed. For example, how well do children keep track of each player's progress as well as changes in the lead position? Are these abilities associated with playing a highly strategic game? Future research can compare this age group with older children who are more cognitively prepared to manage the subtleties of a highly strategic game.

In conclusion, it does not appear that either young boys or girls follow a single rule when making their bead selections in this competitive game-playing context. When girls played exclusively with other girls, unique concerns may have arisen for them and affected their competitive behavior. Fabes, Martin, and Hanish (2004) have suggested that gender-typed behavior in early childhood becomes more pronounced with increased exposure to same-gender peers in preschool. This is not to suggest that other forms of social interaction are uniformly diminished when girls play together. Nevertheless, competition needs to be examined in the context of both typical and less typical gender groupings. Gender differences with respect to competition must also be viewed developmentally. The lack of consistency of gender-typed patterns of competition at this early age along with more consistency in gender-typed patterns of competition among older children suggest that the impact of gender and gender composition on competition is still in transition for the 5-year-olds studied here. Yet the context of competition should be expected to continue to exert at least some influence on the expression of competitive behavior beyond early childhood.

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