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The Relation between Behavior Problems and Peer Preference in Different Classroom Contexts

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Abstract

This study tested two alternative hypotheses regarding the relations between child behavior and peer preference. The first hypothesis is generated from the person–group similarity model, which predicts that the acceptability of social behaviors will vary as a function of peer group norms. The second hypothesis is generated by the social skill model, which predicts that behavioral skill deficiencies reduce and behavioral competencies enhance peer preference. A total of 2895 children in 134 regular first-grade classrooms participated in the study. Hierarchical linear modeling was used to compare four different behaviors as predictors of peer preference in the context of classrooms with varying levels of these behavior problems. The results of the study supported both predictive models, with the acceptability of aggression and withdrawal varying across classrooms (following a person–group similarity model) and the effects of inattentive/hyperactive behavior (in a negative direction) and prosocial behavior (in a positive direction) following a social skill model and remaining constant in their associations with peer preference across classrooms. Gender differences also emerged, with aggression following the person–group similarity model for boys more strongly than for girls. The effects of both child behaviors and the peer group context on peer preference and on the trajectory of social development are discussed.

Introduction

Motivated by longitudinal evidence linking childhood peer rejection with later maladjustment, investigators have worked to identify the behavioral determinants of peer rejection (Coie, Dodge, & Kupersmidt, 1990; Parker & Asher, 1987). Consistently across studies, aggressive, withdrawn, and inattentive-hyperactive behaviors have predicted peer rejection, whereas prosocial behaviors have been linked with peer acceptance (Coie et al., 1990; Newcomb, Bukowski, & Pattee, 1993). The reasonably high level of stability in peer rejection across changing peer contexts (Coie & Dodge, 1983; Coie & Kupersmidt, 1983) has led to the assumption that peer rejection often results from deficits in child social skills (Ladd & Mize, 1983).

Although rejection is stable for many children, at least 50% of rejected children show improved peer status in new peer contexts (Bukowski & Newcomb, 1984; Coie & Kupersmidt, 1983).

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Some of this discontinuity may reflect child behavior change, but several recent studies also suggest that a child's acceptability to peers is affected by aspects of the social context as well as by the child's behaviors. In 1986, Wright, Giammarino, and Parad drew on Tversky's (1977) similarity model of social judgment processes to hypothesize that behaviors such as aggression and withdrawal would be evaluated by peers in the light of local norms for behavior. That is, they predicted that such behaviors would lead to negative peer evaluations only when the behaviors were infrequent and nonnormative in the context of a particular peer group. When they examined the peer status of boys attending a summer camp for children with behavioral problems, Wright et al. (1986) found that aggressive behavior predicted low peer status in groups in which aggressive behavior was uncommon. However, in groups containing many aggressive boys, aggressive behavior was unrelated to peer status. Conversely, social withdrawal was unrelated to status in the low aggression groups, but predicted low status in the high aggression groups. Only prosocial behavior had a consistent relation to peer status across groups, as it was linked to positive peer status in both low- and high-aggressive groups. Boivin, Dodge, and Coie (1995) tested the person–group similarity model in a more representative population—a set of experimental play groups composed of first- or third-grade African American males. Similar to Wright et al. (1986), Boivin et al. (1995) found that reactive aggression predicted low status in play groups containing few reactive aggressive members, but was unrelated to peer status in groups with many aggressive members. Boivin et al. (1995) also identified groups that were high or low in normative rates of social withdrawal (solitary play) and prosocial behavior. The relation of social withdrawal to peer status varied by group in a manner consistent with the person-group similarity model—predicting low status in groups where withdrawal was nonnormative, but unrelated to status in groups in which it occurred more frequently. In addition, the correlation between prosocial activity and peer status was significant in high positive interaction groups, but did not reach significance in low positive interaction groups, *r*s = .40 and .20, respectively.

This research raises questions about the generalizability of the behavioral correlates of peer preference across different peer group contexts. To address these questions, analytic models would need to include both individual and group levels in the prediction of peer preference and to estimate the proportion of variance accounted for by each. A second issue raised involves the possibility that some behaviors reflect social skill competencies or deficits that have an “absolute” social value across peer contexts, whereas other behaviors may vary in their social appropriateness depending upon the degree to which they are normative in a particular group setting. Developmental theory and research provide a basis for making hypotheses about behaviors that may affect peer relations in consistent ways across context (following a social skills model) and behaviors that may affect peer relations in different ways according to the group context (following the person–group similarity model).

Consider, for example, differences between aggressive behaviors and inattentive–hyperactive behaviors. Although aggressive behavior is often correlated with peer rejection (Coie et al., 1990), approximately one-third to one-half of the boys who show high rates of aggressive behavior are not rejected by peers (Bierman, 1986; Coie, Belding, & Underwood, 1988; Dubow, 1988). Physical or direct aggression alone does not appear linked strongly with rejection among boys; indeed, some boys appear able to use aggressive behaviors effectively to achieve dominant leadership positions (Perry, Perry, & Kennedy, 1992). In some peer contexts, aggressive behaviors are viewed as appropriate means of assuring self-protection and instrumental goal attainment and, as such, do not interfere with establishing and maintaining friendships (Cairns, Neckerman, & Cairns, 1989; Giordano, Cernkovich, & Pugh, 1986).

However, aggressive boys who show a broad array of dysregulated behaviors, including inattentive, reactive, disruptive, and unskilled behaviors along with their aggression, are at high risk for peer rejection (Bierman, Smoot, & Aumiller, 1993; Dodge, Coie, Pettit, & Price,

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1990). The inattentive and hyperactive behaviors of these boys impair their ability to interact effectively with peers, perhaps because they make it difficult to attend to social cues, inhibit impulsive responding, and regulate interpersonal reactions (Campbell, 1990; Pope, Bierman, & Mumma, 1991; Stormshak, Bierman, & the Conduct Problems Prevention Research Group, 1998). Whereas aggressive behaviors can serve as effective social strategies in some peer contexts, inattentive–hyperactive behaviors (linked with social perception deficits and impulsive reactivity) are unlikely to foster adaptive social behavior in any context. Although it has not yet been explored empirically, one might expect inattentive–hyperactive behaviors to follow a social skill model with higher levels of these behaviors predicting poor peer relations regardless of the extent to which these behaviors are prevalent within a group, whereas the impact of aggressive behavior might follow a person–group similarity model, with its acceptability varying depending upon the group context and norms.

In a similar vein, different predictions might be made about the extent to which peer group norms will affect the acceptability of socially withdrawn and prosocial behaviors. Like aggression, not all forms of social withdrawal are equally predictive of social maladjustment. Some children engage in high rates of solitary play, preferring constructive and manipulative play to social play (Calkins, Fox, Rubin, Coplan, & Stewart, 1994). A preference for solitary play does not necessarily indicate social maladjustment, but rather may reflect a stylistic preference for quiet and constructive play rather than group play (Calkins et al., 1994). In peer groups that include many children who prefer solitary, constructive play, these play preferences may not interfere with positive peer relations. Only when a mismatch exists between a child's preference for solitary play and the play preferences of the majority of children in the peer group might this preference lead to reduced peer acceptance. In contrast, when socially withdrawn behavior is accompanied by prosocial skill deficits, peer rejection and stable social problems are considerably more likely (Rubin & Stewart, 1996). Prosocial behavior (the ability to cooperate, share, and interact positively with others) may be an important competency underlying effective peer interactions across developmental levels (Hartup, 1983) and across contexts (Wright et al., 1986). Whereas socially withdrawn behavior does not necessarily indicate social skills deficiencies (but may reflect stylistic play preferences), low levels of prosocial behaviors and positive interactions are considerably more likely to reflect social incompetencies. A stylistic preference for solitary play may not interfere with peer relations, unless it is an atypical behavior in a given peer group context. In contrast, prosocial behaviors may have more “absolute” value in terms of social relations, being sanctioned and appreciated by children in all group contexts (Gillmore, Hawkins, Day, & Catalano, 1992), and deficits in the ability to relate positively to others may impair peer relations across different social contexts.

In summary, developmental research suggests that aggressive and withdrawn behaviors themselves are not necessarily detrimental to peer relations. Following a person–group similarity model, the norms of the peer group may have a strong influence on the acceptability of these behaviors and on peer evaluations of group members who exhibit these behaviors. In contrast, following a social skill model, inattentive–hyperactive behaviors impair social functioning and appear likely to reduce peer acceptance across settings; prosocial behaviors support effective social interaction and are likely to foster peer acceptance across settings.

The purpose of the present study was to test directly the hypothesis that a person–group similarity model would best predict the relations between aggressive and withdrawn behavior and peer status and that a social skill model would best predict the relations between inattentive–hyperactive and prosocial behaviors and peer preference. That is, some behaviors are context-independent and important regardless of the environment in which children interact, whereas other behaviors are context-specific and are significantly impacted by group norms. The present study extended previous research in this area in several important ways.

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First, this study focused on normative peer group contexts (regular elementary education classrooms). Previous studies testing the person-group similarity model utilized newly formed small groups of boys. Hence, it remains important to establish the extent to which social context affects peer evaluations of aggressive and withdrawn behaviors in more representative peer groups, such as regular education classrooms, that include both boys and girls who have had a substantial history of interaction.

In addition, given the nested structure of the data and the desire to examine the concurrent effects of individual child behavior and classroom/environmental behaviors, this study improved the methodological approach to hypothesis testing by utilizing hierarchical linear modeling (Bryk & Raudenbush, 1992). The relations between children's behavior and peer preference scores were examined within classroom contexts, and the effects of classroom levels of behavior on these relations were also examined. Variances accounted for at the individual and classroom level were thus assessed simultaneously, and the extent to which classroom levels of a behavior problem qualified the relation between the behavior and peer preference was estimated. Thus, the study provided empirical data to examine contextual influences on child behavior consistent with a broader ecological model.

Third, the predictions made about aggressive behaviors were distinguished from the predictions made about other dysregulated and undercontrolled behaviors (inattentive–hyperactive behaviors). Although these behavior problems frequently covary, they can be discriminated and often reflect different developmental etiologies and outcomes (Hinshaw, 1987). Similarly, different predictions were made for social withdrawal and prosocial behavior. Thus, the present study offered an expanded test of the differential predictions made by the social skill model and the person–group similarity model.

Finally, this study included girls as well as boys. Most of the previous research examining the relations between aggression and peer relations has focused on boys. As a result, much less is known about the factors that influence peer rejection in girls, particularly girls who are part of high-risk peer groups. Preliminary findings suggest that overt aggression is a less central characteristic of rejected girls than of rejected boys (French, 1990). For girls, the correlates of peer rejection may involve subtler forms of aggression and/or elevated levels of internalizing problems (Crick & Grotpeter, 1995; French, 1990). These results do not mean that aggressive behaviors are acceptable among girls, but rather that overt aggression occurs at such low rates among girls that it alone does not account for a majority of cases of peer rejection. In fact, consistent with the person–group similarity model and due to the nonnormative nature of aggression among girls, aggression may have increased significance as a predictor of peer relations when it does occur among girls (Cairns & Cairns, 1984; Robins, 1986).

Method

Sample

A total of 2895 children in 134 classrooms participated in the study (the mean number of children in each classroom was 22). The participants were children in first-grade classrooms taking part in the Fast Track project (Conduct Problems Prevention Research Group, 1992). Participants were selected from four areas of the country, each representing different cross-sections of American culture. The areas included: (1) Durham, NC, a small city with a large low- to middle-SES African American population, (2) Nashville, TN, a moderate-sized city with a mix of low- to middle-SES African American and Caucasian families, (3) Seattle, WA, a moderate-sized city with a low- to middle-SES, ethnically diverse population, and (4) central Pennsylvania, a mostly rural area with low- to middle-SES Caucasian families. Children were diverse on race, with 46% minority (predominantly African American) and 54% Caucasian families, reflecting the ethnic diversity of the population at the four sites.

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Measures

Teacher ratings and sociometric peer interviews were collected during interviews held in the spring of the first-grade year.[1]

Teacher ratings of behavior—The Teacher Observation of Classroom Adaptation—Revised (TOCA-R; Werthamer-Larsson, Kellam, & Wheeler, 1991) and nine additional items assessing social competence were administered. Standard scales from the TOCA-R were used to measure aggression (Authority Acceptance: yells, fights, lies, teases others, harms others), inattention (Cognitive Concentration: distractible, poor concentration, mind wanders, poor effort), and withdrawal (Social Avoidance: initiates interactions, plays with others, social contact with others). Items assessing social competence were used to form a prosocial scale (e.g., friendly, helpful to others, understands others' feelings, resolves peer problems on his/her own, gives suggestions and opinions without being bossy). For all items, teachers responded using a five-point scale to describe the frequency of the behavior problems for each child, with response options ranging from "almost never" to "almost always." The scales were internally reliable (αs were .95 for aggression, .87 for withdrawal, .97 for inattention, and .87 for prosocial).

Sociometrics—At least 75% of the children in each class participated in individual sociometric interviews. Each child was presented with a list of all the classmates in his/her classroom. The interviewer read through the roster once to make sure that the child was familiar with each classmate and then asked for a series of behavioral and peer nominations. Children were asked to identify the classmates they liked the best ("like most" [LM] nominations) and the classmates they liked the least ("like least" [LL] nominations). Following the Coie and Dodge (1983) procedure, the difference between these scores (LM − LL) was used as an index of social preference and was standardized within each classroom. Rather than limit the number of nominations that children could make, an unlimited nomination procedure was utilized. This procedure potentially allowed children in high- or low-aggression classrooms to nominate as many or as few children as they wanted. Thus, the hypotheses of the study were not constrained by a limited nomination procedure. Unlimited behavioral nominations were also collected. Children were asked to identify classmates who were aggressive ("Some kids start fights, say mean things and hit other kids"), inattentive/hyperactive ("Some kids get out of their seat a lot, do strange things, and make a lot of noise. They bother people who are trying to work"), prosocial ("Some kids cooperate a lot. They help others and share"), and shy/withdrawn ("Some kids are shy and play alone most of the time").

Formation of constructs across raters—Peer-rated behavioral nominations were used in combination with teacher ratings to form cross-informant behavioral constructs. Before the measures were combined, *z*-scores were computed for all of the teacher and peer behavior measures by standardizing the scores across the entire sample. This process was undertaken to provide equal weighting for teacher and peer ratings. Cross-rater correlations were also examined prior to combining ratings, to assure that teacher and peer ratings reflected the same constructs. Ratings of aggression, prosocial behavior, and inattention–hyperactivity showed a moderate degree of correspondence across teacher and peer raters, $r = .57$ for aggression, $r = .37$ for prosocial, and $r = .40$ for inattention–hyperactivity. In contrast, teacher ratings of withdrawal and peer ratings of shy behavior were uncorrelated, $r = .08$. These results are consistent with previous research suggesting that first-grade children are often unable to provide differentiated ratings of withdrawn behaviors (Younger, Schwartzman, & Ledingham,

[1]Spring data collection in the first-grade year was conducted after a full year of the intervention trial. Although half the classrooms received the universal classroom-based intervention, only a small percentage of high-risk children received the full intervention package (5% of this sample).

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1985). Therefore, in the present study, only teacher ratings of withdrawal were included in the analyses, using the Social Avoidance scale of the TOCA-R. For the other three types of behavior problems, teacher and peer ratings were combined. Coefficient αs for the combined rater scales indicated a high level of internal consistency, αs = .94 for aggression, .85 for prosocial, and .96 for inattentive–hyperactive. These combined teacher–peer scores (for aggression, prosocial, and inattentive–hyperactive) and teacher scores (for withdrawal) were used as individual level (level 1) predictors in the hierarchical model, providing an index of the extent to which the behavior problems shown by individual children predicted their social preference score.

A combination of peer and teacher ratings was also used to assess classroom levels of the four behavior problems. As defined by the person–group similarity model, acceptability of social behaviors will vary to the degree that such behaviors occur more or less frequently (are more or less normative) in a given social context (Wright et al., 1986). To determine the "normativeness" of the various behavior problems in different classrooms, the median distribution was created for both teacher- and peer-rated behavior across the 134 classrooms. Median scores of behavior in each classroom were used rather than means to control for outliers (e.g., a few highly aggressive children) and as better representations of classroom norms. A combined score of the median level of both the teacher- and peer-rated behavior within that classroom was assigned for each of the four behaviors of interest. For example, the median score of aggressive teacher and peer ratings within a given classroom was used as that classroom's "aggression" score. These scores were used as classroom level (level 2) predictors in the hierarchical model (described in the results section), assessing the degree to which classroom levels of a behavior problem had an impact on (e.g., qualified) the relation between individual child behavior problems and peer preference scores.

Table 1 provides descriptive statistics for each of the behavioral variables on both the individual and classroom level. The sample provided a solid range of behaviors across both children and classrooms for analyses.

Results

Overview of Hierarchical Linear Modeling

The structure of the sample provided an opportunity to test hypotheses using hierarchical linear modeling (HLM). HLM was ideal for this study because this procedure can test effects on both the individual and classroom level. HLM is essentially a combination of two regression equations. One equation (level 1) examines the effects at the individual level, for example, the extent to which a child's aggression predicts the child's peer preference score. The other equation (level 2) examines the effects at the classroom level, for example, the extent to which classroom levels of aggression predict the slope between child aggression and child social preference (e.g., between classroom variance in the model). In other words, the level 2 equation examines classroom behaviors as predictors of the relation between child behaviors and peer preference. In this study, significant level 2 effects would indicate that relations between child behavior problems and peer preference varied across classrooms—supporting the person–group similarity model. Nonsignificant level 2 effects would indicate that relations between child behavior problems and peer preference were not affected by these behaviors in the classroom context, but remained consistent across classrooms, supporting the social skill model. Thus, HLM enabled a specific test of the hypotheses of this study, that aggression and withdrawal would vary in their relation to peer preference based on the normativeness of these behaviors within the classroom following the person–group similarity model (showing significant effects at both level 1 and level 2 of the model). In contrast, inattention and prosocial behavior were expected to predict peer preference consistently across classroom contexts (showing significant effects only at level 1 of the model.)

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Full Model

The first model tested included the effects of all four behaviors at both the individual and classroom level. Child scores for the four behaviors were entered as level 1 predictors in the model, and median classroom levels of each behavior were entered at level 2 as predictors of each specific individual variable (e.g., level 2 aggression as a predictor of level 1 aggression on peer preference). Table 2 provides the coefficient, standard error, and *t*-scores for behaviors at both level 1 (child) and level 2 (classroom). At level 1, the effects of the individual variables are controls for each other, that is, results reflect independent contributions of these constructs to peer preference scores.

At the individual level, aggression, inattention, and prosocial behavior each predicted peer preference in the expected direction, with significant *t*-scores of −4.64, −9.19, and 22.20, respectively. However, at the individual level, withdrawal did not predict peer preference, $t = 1.22$, suggesting that withdrawal does not add variance to the prediction of peer preference after the effects of aggression, inattention, and prosocial behavior have been accounted for in the model. β coefficients at level 1 represent average slopes, thus −.117 represents the average slope predicting peer preference from aggression. This model is similar to results that would be obtained using ordinary least squares.

At the classroom level (level 2), both aggression and withdrawal were significant, with *t*-scores of 3.36 and 3.02, respectively (see Table 2). At level 2, the coefficient of .014 represents the prediction of the classroom level β (individual aggression to peer preference) from classroom aggression. The results are consistent with the person–group similarity model. Thus, the prediction of aggression and withdrawal to peer preference is dependent on the context in which these behaviors occur. As levels of aggression increase in classrooms, aggression becomes less predictive of low peer preference. The same effect emerged for withdrawn behaviors, which became more predictive of low peer preference as withdrawal became less common at the classroom level. In contrast, inattention and prosocial behaviors were not significant at the classroom level, suggesting that these classroom behaviors do not affect relations between individual inattentive or prosocial behaviors and peer preference; inattention is detrimental to peer preference and prosocial behavior promotes peer preference regardless of the level of these behaviors within the classroom.

The first step in HLM is to partition the variability of outcome variables into their within- and between-school components as a means of comparison with future models. Within-school variance of peer preference was used as a means of comparing the variance contributed by additional variables. The level 1 error (*R*) for the unconditional model was .978, representing variance that remained unexplained or explainable by individual variables within each classroom. These effects were then evaluated by computing the proportion of the variance components and error variance of the level 1 predictors accounted for in additional models. When compared with the unconditional model, 50% of the variance in within-classroom variability was accounted for by this model. Level 2 predictors (classroom level variance) accounted for an additional 10% of the variance over level 1 predictors (individual level variance).[2] These results are presented graphically in Figure 1. Values of low and high behaviors were entered into the resulting regression equations to plot the lines. For each behavior, effects of the other behaviors were held constant (at 0). The graphs depict the regression lines predicting peer preference at high and low levels of classroom behavior; they are different across classrooms for aggression and withdrawal, but stable across classrooms for inattention and prosocial behaviors.

[2]Variance components from an unconditional model with no level 2 predictors were compared with those from the conditional model presented in Table 2 using the following equation: (unconditional variance–conditional variance)/unconditional variance (Bryk & Raudenbush, 1992, p. 90).

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χ^2 and degrees of freedom for each random effects model are presented at the bottom of Table 2. Both the inattention and prosocial models were nonsignificant, suggesting the model provided a good fit to the data with limited between-classroom variance. Thus, there does not appear to be variance in the model to be accounted for by additional variables at the classroom level, suggesting that additional school variables are not necessary to explain the relation among peer preference, inattention, and prosocial behaviors and that the variation in these variables is occurring within classroom. However, aggression and withdrawal χ^2 were both significant, suggesting residual parameter variance between classrooms in these behaviors.[3] Thus, the relation among aggression, withdrawal, and peer preference does vary between classsrooms.

Gender Differences in Models

The full model presented in Table 2 provided a test of our initial hypotheses. However, to test the main and interactive effects of gender in one model, nine variables at level 1 and level 2 would be needed (18 total variables). Instead, to simplify interpretation, four separate models were specified to examine the contribution of gender to the prediction of peer preference. An additive approach was used to control for effects already presented; that is, each effect presented in Table 3 was included in the model as a fixed effect. Then, gender was included in the model as a main effect, the behavior at level 1 (e.g., aggression, withdrawal, inattention, or prosocial) was entered, and a gender × behavior interaction term (at level 1) was entered. Classroom level variables were included at each point as predictors of the gender effect on peer preference, the behavior effect on peer preference (e.g., the full model as presented in Table 3), and the gender × behavior effect on peer preference. Random effects models were specified for the gender and gender × behavior interaction.

Consider first the effects of gender on the relation between aggression and peer preference. As shown in Table 3, gender made differential contributions to the prediction of peer preference in classrooms that were characterized by high and low levels of aggression, level 2 effect for gender, $t = 6.512$, $p < .050$. As shown in Figure 2E, this effect was due to the fact that girls were more well-liked than boys in high-aggression classrooms. Indeed, as aggression increased in the classroom, differences between boys' and girls' preference scores also increased, with girls more well-liked than boys in high-aggression classrooms. In addition, there was a significant interaction between gender and aggression in the prediction of peer preference, level 1 interaction effect for gender × aggression, $t = -2.206$, $p < .05$. This interaction effect reflected the finding that aggression was a more consistent (negative) predictor of peer preference for girls than for boys, such that low-aggressive girls were liked consistently in low- and high-aggression classrooms. In contrast, relations between aggression and peer preference were variable for boys, as aggression predicted positively to peer preference in high-aggression classrooms and negatively to peer preference in low-aggression classrooms (see Figure 2E for graphic representation).

Next, consider the effects of gender on the relation between withdrawal and peer preference. Table 3 shows that significant level 1 effects emerged for gender and for the gender × withdrawal interaction and that each of these level 1 effects was qualified by a level 2 effect for classroom withdrawal. As shown in Figure 2G, this complicated set of effects reflects the fact that withdrawal was associated with peer preference only in high-withdrawal classrooms, and in those classrooms it predicted peer preference in different ways for boys and girls. Gender

[3]Fast Track is a collaborative project across four different sites in the country. To examine possible effects of site, a three-level model with site, classroom level behaviors, and individual behaviors was specified. Site was not significant, and the pattern of results was similar to that presented in Table 2. Intervention was also included in the analyses to examine the possible effects of intervention on this theoretical model. Although intervention status had a significant effect on overall peer preference (Conduct Problems Prevention Research Group, 1997), this model remained consistent when intervention effects were statistically controlled.

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differences were greater in high- than in low-withdrawal classrooms, with girls being more well-liked than boys. In high-withdrawal classrooms, nonwithdrawn girls were more well-liked than withdrawn girls, whereas the reverse relation between withdrawal and liking held for boys.

When relations between inattention and peer preference were examined, a main (level 1) effect for gender emerged, qualified by a level 2 effect for classroom inattention. As shown in Figure 2F, gender differences were minimal in low inattention classrooms, but in classrooms containing many inattentive children girls on gender, the results suggest that for boys, mean preference scores across low and high prosocial individuals were similar across classrooms characterized by varying levels of prosocial behavior. In contrast, for girls, classroom context affected the mean preference scores received by individuals. In low prosocial classrooms, girls received average peer preference ratings even when they exhibited low rates of prosocial behavior (and they received above-average preference ratings when they exhibited high rates of prosocial behavior). In high prosocial classrooms, girls received below-average peer preference ratings when they exhibited low rates of prosocial behavior and above-average ratings when they exhibited high rates of prosocial behavior. These results are presented graphically in Figure 2H.

χ^2 and degrees of freedom for each random effects model are presented in Table 3. The random effects model for gender was significant in each case, indicating variance in peer preference scores across classrooms by gender. These differences are evident in the graphs presented in Figure 2. In all cases, the gender × behavior model was nonsignificant, indicating no residual parameter variance at the classroom level. That is, the gender × behavior model accounted for a significant proportion of the variance in peer preference scores and provided a good fit to the data in each model specified.

Discussion

The purpose of this study was to compare two distinct models of the behavioral determinants of peer preference and assess the applicability of each—the person–group similarity model and the social skill model. The person–group similarity model suggests that peer preference for social behaviors, such as aggression and withdrawal, will be influenced by peer group norms such that children will be rejected by peers if they display high levels of nonnormative behavior (Boivin et al., 1995; Wright et al., 1986). In contrast, the social skill model suggests that social behaviors reflect deficiencies (such as inattentive– hyperactive behaviors) or competencies (such as prosocial behaviors) that impede or enhance children's abilities to elicit positive responses (or avoid negative responses) from peers (Ladd & Mize, 1983). The results of the present study provide support for each of these models.

The findings replicate and extend the work of Wright et al. (1986) and Boivin et al. (1995) concerning the impact of peer group norms on the social preference of children who show elevated levels of aggressive and withdrawn behavior. Just as in Wright et al.'s special placement camp groups and in Boivin et al.'s laboratory play groups, the social evaluation of aggressive children was affected by the degree to which aggression was normative in the elementary classroom context: as classroom levels of aggression increased, the negative effects of child aggression on peer preference decreased. Aggressive behavior was considerably more likely to lead to low peer preference when it was nonnormative in the peer context. These findings were particularly true for boys; indeed, for boys aggression and peer preference were positively related in highly aggressive classroom contexts. Thus, the results supported the person–group similarity model predictions about the acceptability of aggression in the normative peer context of the elementary school classroom, highlighting the importance of examining context in understanding the relations between behavior problems and peer relations.

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Interestingly, girls and boys differed in the acceptability of their aggressive behavior, as low levels of aggression were never detrimental to peer preference for girls. It may be that, at a general societal level, aggressive behavior is relatively nonnormative for girls. For example, base rates of aggressive behavior are considerably higher among boys than girls, and parents and teachers are likely to view aggression as more inappropriate for girls than for boys, reacting with more consistent and stringent suppression attempts (Fagot, 1977; Hartup, 1983). In social contexts with high levels of aggressive behavior, aggressiveness may be strategic socially for boys and may increase their dominance and status in the peer group. For girls, in contrast, societal norms support low levels of aggressiveness, so that being nonaggressive may be protective for girls in terms of their peer status, regardless of the rates of aggression shown by other members of the class. Interestingly, in high-aggression classrooms, girls were more well-liked than boys. Perhaps in highly aggressive classrooms, boys are under pressure to compete for status with aggressive behaviors—pressure that may decrease their comfort with same-sex play partners and may increase the attractiveness of the less-aggressive girls as play partners.

Withdrawn behaviors also varied in their predictability to peer preference across classrooms with differing levels of withdrawn behavior, partially fitting the predictions made by the person–group similarity model. When withdrawn behavior was normative in a classroom, such that many of the children in the classroom showed high levels of solitary play and low rates of social interaction, withdrawn behavior predicted positively to peer status for boys. In addition, in these high withdrawn classrooms, girls were more liked than boys, in general, regardless of their rates of withdrawn behavior. Perhaps in the case of withdrawal, as in the case of aggression, peer evaluations are affected both by the immediate context of the classroom and by societal level norms and differing problem base rates associated with gender. That is, in "quiet" and low-interactive classroom contexts, norms may favor traditionally more feminine styles of interactions, which may involve more focused small-group play and conversation rather than the traditionally more masculine styles of interaction, which may involve more rough-and-tumble play in larger, more extensive play groups (Hartup, 1983). Whereas rate of interaction did not affect the peer acceptability of girls in these classrooms (in general, withdrawn and nonwithdrawn girls were more well-liked than boys), the acceptability of boys was affected such that they were more well-liked when they exhibited a quiet social style.

In support of the social skill model, not all forms of behavior problems were acceptable to peers simply because they were more common in the classroom. Because previous research suggests that aggressive-rejected children almost always have deficits in prosocial skills and show dysregulated behavior problems (Bierman et al., 1993; Cillesson, van IJzendoorn, Van Lieshout, & Hartup, 1992; Pope et al., 1991), we anticipated that prosocial skills (positively) and inattentive–hyperactive behaviors (negatively) would predict peer preference regardless of classroom environment.

As expected, for both boys and girls, prosocial behaviors emerged as a positive predictor of social preference across all types of classrooms. In classrooms where low levels of prosocial behavior were typical, girls were more well-liked than boys, so that gender as well as prosocial behavior contributed to peer preference in these classrooms. As suggested by the social skill model, prosocial behaviors seem to reflect social competencies and capabilities for sensitive and responsive social interaction that promote social acceptability in all peer contexts. Apparently, although the "normativeness" of some behaviors influences their social acceptability (fitting the person–group similarity model), other behaviors have more "absolute" value in terms of promoting (or interfering with) the ability to establish and maintain positive peer relations. Inattentive–hyperactive behaviors (in a negative direction) and prosocial behaviors (in a positive direction) appeared to function in a more "absolute" sense, reflecting social competencies (or deficits) that promoted (or impeded) positive peer relations. Although the acceptability of aggressive behaviors may vary as a function of group norms, the intrusive

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dysregulated behaviors associated with inattention and hyperactivity appear to alienate peers across various groups. These findings highlight the importance of social skill training for both boys and girls, particularly encouraging at-risk boys to use social skills in high risk classrooms.

One limitation of the present study was the lack of measures focusing on aggressive behaviors more typical of girls at this age. Recent research has highlighted the importance of subtler forms of interpersonal aggression such as relational aggression in girls (Crick & Grotpeter, 1995). Future research involving measures of relational aggression might uncover interactions between behavior and peer context that affect the social status of girls.

Results from this study suggest that to fully understand peer rejection, it is important to examine children's behavior within the context in which it occurs. The integration of the social skill model and the person–group similarity model provides an ecological perspective from which to understand the process of peer rejection. Future research should examine the effects of changing contexts on the developmental trajectories of children who show behavior problems. For example, what are the developmental outcomes for aggressive children who are liked in highly aggressive classrooms and then move to classrooms where aggression is less normative? Conversely, could the peer status of an aggressive-rejected child be improved by movement into a classroom in which aggression is more common and more accepted by peers? One might expect that the children with elevated levels of aggression but without other concurrent social deficits (e.g., without elevated inattentive–hyperactive behaviors or prosocial skill deficits) might be responsive to changing peer norms and reduce their aggression if placed in classrooms with peers who discouraged aggression. In contrast, children with complex problem profiles, including aggression, inattentive–hyperactive behaviors and low levels of prosocial skills, might recreate their rejected status even in classrooms where aggression is more acceptable.

A related developmental question concerns the consequences of being an aggressive child in a classroom in which peers condone or support aggressive behavior. Although an aggressive child might avoid the rejection that may accompany aggression in other classrooms, one cannot assume that the absence of rejection reduces the risk for outcomes associated with aggressive behavior and contact with aggressive peers. First, as reported by Werthamer-Larsson et al. (1991), classrooms that contain many children with elevated levels of aggression typically contain children with multiple behavioral and academic deficits, creating a highly disruptive classroom environment. Studies that have focused on the developmental risks associated with living in high-risk environments may be pertinent here. For example, children who live in high-risk, aggressive neighborhoods may have limited opportunities to interact with nonaggressive role models and may be reinforced in the use of aggression as an adaptive strategy for coping with environmental challenges (Kupersmidt, Griesler, DeRosier, Patterson, & Davis, 1995). High-risk classrooms may operate similarly, that is, creating additional stress for children that may be predictive of later adjustment difficulties, decreasing models for alternative prosocial skill development, and increasing the opportunities for the modeling and escalation of aggressive behavior problems (Attar, Guerra, & Tolan, 1994).

This research also has implications for school-based interventions that target teachers and classrooms. The classroom environment is a major socialization context in early elementary school. Despite this fact, few social skill programs target teachers, behavioral management, and the classroom environment directly. Instead, the focus is typically on teaching social skills. Inclusion of more intervention strategies aimed at the school ecology would be beneficial in future intervention research.

The purpose of this study was to explore the utility of two divergent hypotheses about the effects of social context on social status. The support for a person–group similarity hypothesis for aggressive behavior leads to more interesting speculations about the implications of social

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context on development. The fact that prosocial behavior and inattentive–disruptive behaviors were universally related to peer status suggests that the emphasis placed on social skill training as a solution to peer rejection is not misplaced. There are some behaviors that are valued (or resented) by all peer groups.

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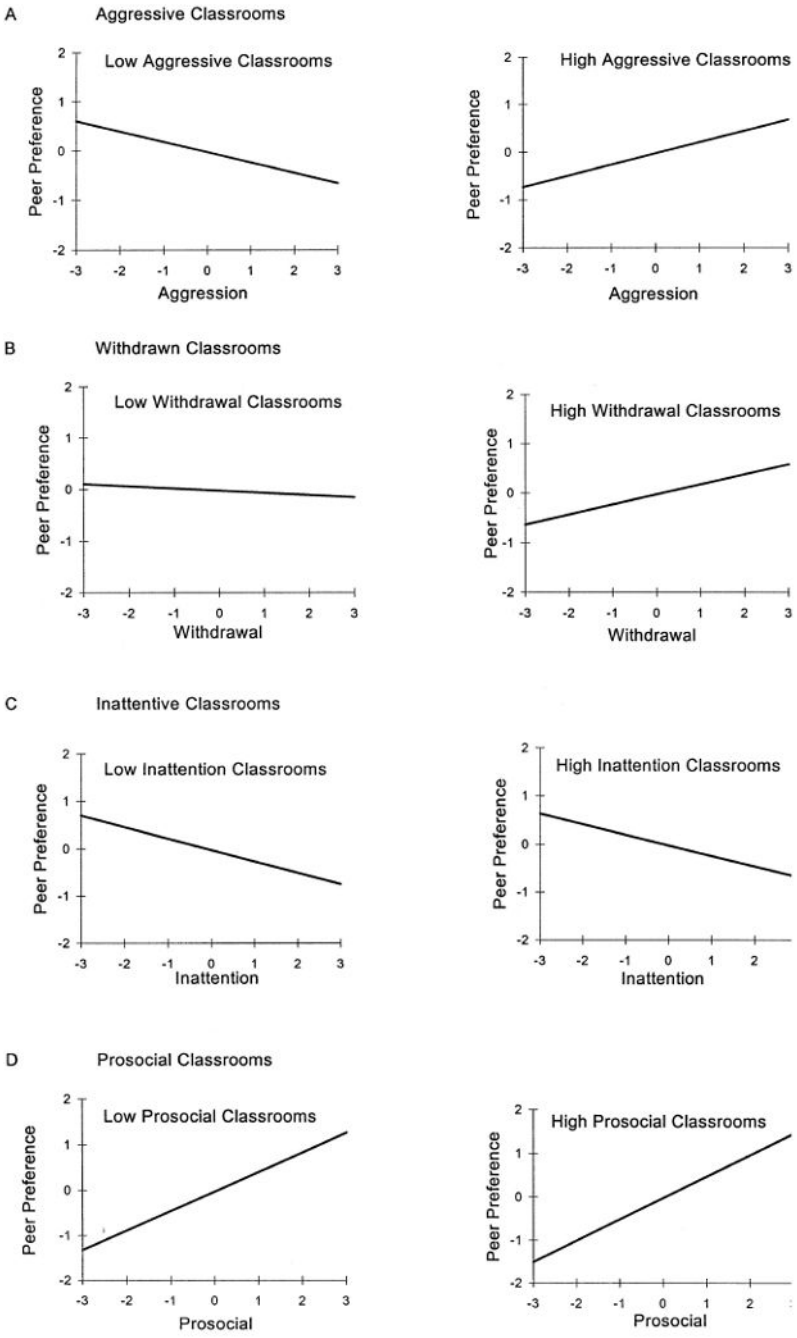

Figure 1. Regression lines of behaviors predicting peer preference in classrooms with high and low levels of different behavior problems

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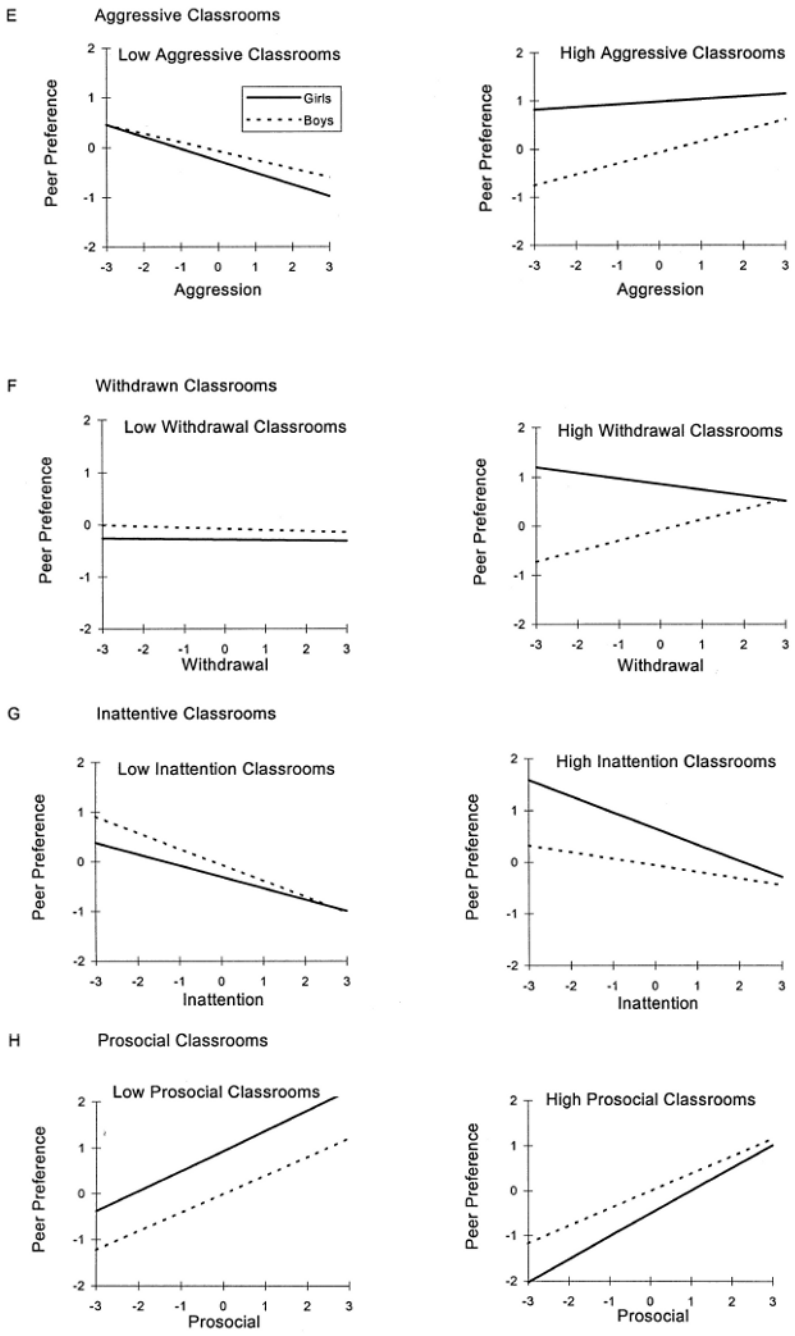

Figure 2. Regression lines of behaviors predicting peer preference by gender in classrooms with high and low levels of different behavior problems

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Table 1

Means and Standard Deviations of Behavioral Measures (Raw Scores)

Behavior	Mean	Standard Deviation	Minimum	Maximum
Individual level (level 1)				
Aggression (T)	10.4	10.5	0	50
Inattention (T)	20.5	14.9	0	60
Withdrawal (T)	4.3	3.6	0	20
Prosocial (T)	16.2	5.3	0	25
Aggression (P)	1.9	2.9	0	20
Hyperactivity (P)	1.9	2.8	0	23
Prosocial (P)	2.6	2.5	0	15
Classroom level (level 2)				
Aggression	6.59	4.29	0	32.25
Inattention	14.38	7.10	0	42
Withdrawal	3.84	2.66	0	14
Prosocial	14.29	3.49	7	23.5

Note: Peer (P) and teacher (T) ratings were combined for aggression, inattention, and prosocial variables. Peer ratings were scaled to the comparable SHP scale and then combined with teacher ratings (averaged).

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Table 2

Fixed Effects Estimates for Full Model

Fixed Effect	Coefficient	Standard Error	*t*-Score
Intercept	.027	.023	1.16
Child aggression (L1)	−.117	.026	−4.64**
Classroom aggression (L2)	.014	.004	3.36**
Child withdrawal (L1)	.025	.020	.200
Classroom withdrawal (L2)	.017	.006	3.02**
Child inattention (L1)	−.223	.025	−9.19**
Classroom inattention (L2)	.000	.002	.200
Child prosocial (L1)	.468	.021	22.20**
Classroom prosocial (L2)	.002	.004	.61
Final estimation of variance components			
	Estimated Parameter Variance	χ^2	Degree of Freedom
Peer preference (intercept)	.035	287.30**	132
Aggression on preference	.030	200.41**	132
Withdrawal on preference	.012	178.43**	132
Inattention on preference	.013	151.98	132
Prosocial on preference	.003	122.57	132

Note: Total proportion of variance explained within classroom = 50%. Total proportion explained by classroom level predictors (level 2) = 10%. Effects for child behaviors are level one effects (L1); effects for classroom behavior are level two effects (L2) and indicate the degree to which level one effects varied across classrooms.

** $p < .01$.

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Table 3
Fixed Effects Estimates of Variance Components for Gender and Gender × Behavior Models

Fixed Effect	Coefficient	Standard Error	*t*-Score
Aggression			
Gender (L1)	.060	.034	1.770
Classroom aggression (L2)	.039	.006	6.512*
Gender × child aggression (L1)	−.085	.038 .006	−2.206*
Classroom aggression (L2)	−.003		−.536
Inattention			
Gender (L1)	.078	.033	2.315*
Classroom inattention (L2)	.022	.003	6.243**
Gender × child inattention (L1)	−.000	.032	−.007
Classroom inattention (L2)	−.007	.004	−1.624
Withdrawal			
Gender (L1)	.107	.034	3.123**
Classroom withdrawal (L2)	.083	.011	7.524**
Gender × child withdrawal (L1)	−.079	.033	−2.361*
Classroom withdrawal (L2)	−.025	.009	−2.732**
Prosocial			
Gender (L1)	.063	.030	2.080*
Classroom prosocial (L2)	−.062	.006	−9.857**
Gender × child prosocial (L1)	.082	.030	2.723*
Classroom prosocial (L2)	.003	.008	.461

Estimates of Variance	Estimated Parameter Variance	χ^2	Degree of Freedom
Aggression: Slope on preference			
Gender	.030	188.80**	132
Gender × aggression	.013	152.75	132
Proportion of explained variance	42%		
Inattention: Slope on preference			
Gender	.030	194.70**	132
Gender × inattention	.005	152.02	132
Proportion of explained variance	40%		
Withdrawal: Slope on preference			
Gender	.012	169.26*	132
Gender × withdrawal	.007	156.41	132
Proportion of explained variance	53%		
Prosocial: Slope on preference			
Gender	.002	160.49*	132
Gender × prosocial	.004	122.47	132

Fixed Effect	Coefficient	Standard Error	*t*-Score
Proportion of explained variance	91%		

Note: Each model included the effects presented earlier in Table 2. Results did not vary and effects were fixed; therefore, *t*-scores and coefficients were not included in this table to avoid redundant presentation. Effects for gender and gender × behavior are level one effects (L1); effects for classroom behavior are level two effects (L2) and indicate the degree to which level one effects varied across classrooms. The proportion of explained variance represents the total percentage of between-classroom variance explained by the inclusion of classroom level predictors (level 2) in the model.

* $p < .05$;

** $p < .01$.

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