

Anxious Solitude Across Contexts: Girls' Interactions With Familiar and Unfamiliar Peers*

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Abstract:

Cross-situational continuity and change in anxious solitary girls' behavior and peer relations were examined in interactions with familiar versus unfamiliar playmates. Fourth-grade girls (N=209, M age=9.77 years, half African American, half European American) were identified as anxious solitary or behaviorally normative using observed and teacher-reported behavior among classmates. Subsequently, girls participated in 1-hr play groups containing 5 same-race familiar or unfamiliar girls for 5 consecutive days. Results support both cross-situational continuity and change in anxious solitary girls' behavior and peer relations. Although anxious solitary girls exhibited difficulty interacting with both familiar and unfamiliar playmates relative to behaviorally normative girls, elements of their behavior improved in unfamiliar play groups, a context in which they received less peer mistreatment.

Article:

To what extent is anxious solitary behavior "in the child" as opposed to "in the situation"? Children's anxious solitary behavior may be attributed to characteristics of the individual (the predisposition to approach social situations fearfully) or characteristics of the interpersonal situation (the anxiety-producing nature of the situation). The extent to which anxious solitary children's behavior among familiar peers is due to individual versus situational factors is often unclear because they are more likely than other children to regularly encounter anxiety-provoking experiences at the hands of familiar peers, including victimization and exclusion (Boivin & Hymel, 1997; Gazelle & Ladd, 2003; Hodges, Malone, & Perry, 1997; Hodges & Perry, 1999; Schwartz, Chang, & Farver, 2001). The extent of individual and situational influence is not an either-or proposition; the interaction of child and environment are increasingly emphasized in contemporary developmental theory (Cairns, Elder, & Costello, 1996; Magnusson, 1988; Sameroff, 1993). In accord with such child by environment theories of development, not only is it plausible that anxious solitary children's fearful approach to social situations renders them vulnerable to peer mistreatment across contexts but it also may be that differences in peer mistreatment across contexts lead to contextual variation in anxious solitary children's behavior.

Children are identified as anxious solitary when they display shy, verbally inhibited, and reticent behavior (onlooking and unoccupied solitary behavior) among familiar peers (Coplan, 2000; Coplan & Rubin, 1998). These behaviors are viewed as manifestations of internal conflict between social interest and social anxiety or social evaluative concerns (worry about how one may be evaluated and treated by others; Asendorpf, 1991; Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Stewart & Rubin, 1995). Similarly identified children are often referred to as *socially withdrawn* or, more specifically, *anxious withdrawn*. We prefer the term *anxious solitary* because it is transparent and descriptive—it designates children who are both socially anxious and solitary as

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the group of interest—but we employ the term used in the original research when discussing others' findings. Because anxious solitary children frequently demonstrate reticent behaviors among familiar peers at school, they are typically identified in this context.

Cross-Situational Continuity

If children's anxious solitary behavior in the school context were primarily a response to mistreatment by classmates, it would be expected that they would demonstrate more normative levels of peer contact outside school where they might have greater discretion in selecting playmates and be treated more positively. However, evidence suggests that children's anxious solitude is not confined to the school context. Several investigations of the after-school interactions of children identified as socially withdrawn at school support the cross-situational continuity of solitude (Asendorpf, 1990; Schneider, Richard, Younger, & Freeman, 2000; Schneider, Younger, Smith, & Freeman, 1998). In kindergarten and again 2 years later in second grade, children who were observed to exhibit high levels of reticent behavior during recess also exhibited extremely low rates of peer contact outside school (both at home and in the community) as reflected in parental logs of children's after-school play activities (Schneider et al., 2000). This study also indicated high correspondence in reticent behavior across indoor (classroom free play) and outdoor (recess) school contexts for socially withdrawn kindergarten children. Similar results have been found during the early adolescent period. In fifth grade and again 2 years later in seventh grade, peer-identified socially withdrawn children exhibited low rates of after-school peer contact as assessed by parental after-school activity logs (Schneider et al., 1998). Thus, evidence suggests that anxious solitary children lack contact with peers across a variety of contexts in their daily lives.

However, it is unclear what degree of overlap may exist between classmates and peers encountered after school. Because school attendance is often determined by locale, children may encounter many of the same peers across contexts. Consequently, documented continuity in anxious solitary children's lack of peer contact across school and after school contexts may be due, in part, to continuity in peers and peer treatment across contexts (correlated constraints; Cairns & Cairns, 1994).

Anxious Solitude and Familiar Versus Unfamiliar Peers

Anxious solitary children's interactions with different sets of peers can be examined by observing their interactions with both familiar classmates and unfamiliar (unacquainted) children. Anxious solitude is traditionally defined in relation to familiar peers because (a) patterns that occur when a child repeatedly interacts with the same peers over time may be of particular importance to social and emotional development, and (b) anxious solitude is conceptualized as stemming from social evaluative concerns rather than from fear of the unfamiliar (Kagan, 1997). Nonetheless, it is plausible that children who have social evaluative concerns with familiar peers may experience similar concerns with unfamiliar peers.

There are a number of observational studies of children's anxious solitary behavior with familiar peers only (Coplan, 2000; Coplan & Rubin, 1998; Younger, Schneider, Wadeson, Guirguis, & Bergeron, 2000) or unfamiliar peers only (Asendorpf, 1991; Coplan et al., 1994), but fewer studies with both familiar and unfamiliar peers (Paquette & LaFreniere, 1994; Stewart & Rubin, 1995). Evidence suggests that children identified as anxious solitary in a familiar context are less skillful than other children when interacting with unfamiliar peers. When interacting with an unfamiliar peer in a laboratory setting, children identified as anxious withdrawn by familiar peers and teachers exhibited less problem solving initiation, less assertiveness, less success in implementation of social strategies, and less reinitiation of problem solving after failure than average children (children below average on both anxious withdrawal and aggression; Stewart & Rubin, 1995). Although results of a comparable study (Paquette & LaFreniere, 1994) did not yield similar results, the study's authors suggest that their null results are attributable to an experimental structure that inadvertently discouraged peer interaction.

Thus, the best available evidence suggests that anxious solitary children display socially wary, unassertive behaviors with both familiar and unfamiliar peers. Yet, extant studies have had limited ability to detect cross-contextual change in magnitude because assessments in familiar and unfamiliar contexts have been of a different nature (e.g., free play with multiple peers at school vs. dyadic laboratory interaction). Examining anxious solitary children's interactions across familiar and unfamiliar peers under similar conditions in a within-subjects repeated measures design would permit a stronger test of change as well as continuity. Moreover, little is known about how familiar versus unfamiliar peers' treatment of anxious solitary children may differ, or whether such differential treatment might contribute to corresponding cross-contextual differences in anxious solitary children's behavior.

Situational Specificity

Although evidence suggests that anxious solitary children are at risk for victimization and exclusion among familiar peers (Boivin & Hymel, 1997; Gazelle & Ladd, 2003; Hodges et al., 1997; Hodges & Perry, 1999; Schwartz et al., 2001), little is known about how anxious solitary children are likely to be treated by unfamiliar peers. Anxious solitary children's tendency to display unassertive, helpless behaviors among unfamiliar peers (Stewart & Rubin, 1995) may place them at risk for being mistreated by unfamiliar peers. Yet it may also be that anxious solitary children have the opportunity to experience more positive (or less negative) treatment by unfamiliar than familiar peers because (a) peers may treat unfamiliar children in a positive or neutral manner before they form perceptions of the child's characteristics (e.g., as shy, vulnerable) and (b) even after perceiving shyness and vulnerability in an unfamiliar child, peers may not mistreat the child until a consensual view of the child as vulnerable or low in social status is established among peers. Because previous studies of anxious solitary children's interaction with unfamiliar peers have involved dyadic single-occasion interaction (Paquette & LaFreniere, 1994; Stewart & Rubin, 1995), it has not been possible to assess emerging perceptions of shyness or social status among multiple unfamiliar peers over repeated interactions. Thus, the nature and temporal evolution of unfamiliar peers' perceptions of anxious solitary children is unknown.

Although available evidence would suggest that anxious solitary children display low social skillfulness across both familiar and unfamiliar contexts (Stewart & Rubin, 1995), it is nevertheless possible that some degree of situational specificity may be detected in their behavior over time. We would expect situational specificity in anxious solitary children's behavior if they receive differential peer treatment in familiar and unfamiliar contexts. Indeed, evidence suggests that anxious solitary children's behavior may change over time as a function of the treatment they receive at the hands of (familiar) peers. Anxious solitary children who experienced peer exclusion during the early school years, in comparison with their nonexcluded anxious solitary counterparts, subsequently demonstrated more stable anxious solitary behavior over middle childhood (Gazelle & Ladd, 2003; see Gazelle & Rudolph, 2004).

The Present Study

We aimed to improve on past cross-contextual studies of anxious solitude by constructing a within-subjects repeated measures design in which anxious solitary children's interactions with familiar and unfamiliar peers were assessed with the same methods and conditions. Toward this end, two social situations were constructed: play groups composed of familiar classmates and play groups composed of unfamiliar peers. Group-entry episodes were embedded in both familiar and unfamiliar play group sessions because group entry is an especially salient task for anxious solitary children and is linked to children's social status among peers (Putallaz, 1983; Putallaz & Gottman, 1981; Putallaz & Wasserman, 1989).

Familiar versus unfamiliar situations. The present study was designed such that familiar and unfamiliar play groups contained the same composition of children of particular classroom sociometric status but differed in whether this status was established among playmates. That is, familiar playmates could have established preconceptions and interaction patterns with each other whereas unfamiliar playmates could not. This design permitted examination of the relationship between anxious solitary children's behavioral patterns and the occurrence of potentially anxiety-provoking peer mistreatment. Because anxious solitary children tend to be mistreated by familiar peers, we anticipated that they would experience interactions with familiar peers as moderately stressful. Although getting acquainted with unfamiliar peers may also involve moderate stress initially, novel playmates also provide an opportunity for a fresh start. Consequently, after initial acquaintance, anxious solitary children may find interactions with unfamiliar peers to be less stressful.

Focus on girls. Anxious solitude appears to be equally prevalent among girls and boys (Coplan, Gavinski-Molina, Lagace-Seguin, & Wichmann, 2001). Although evidence indicates that anxious solitude is linked to peer mistreatment in both sexes, this relationship may be stronger for boys because anxious solitude violates male gender norms (Caspi, Elder, & Bem, 1988; Coplan et al., 2001; Gazelle & Ladd, 2003; Morison & Masten, 1991; Rubin, Chen, & Hymel, 1993; Stevenson-Hinde & Glover, 1996). Perhaps because of such findings, there has been a tendency in the research literature to discount anxious solitary girls' risk for relational difficulties. This tendency may be premature given that it is based solely on cross-sex comparisons of relative magnitude but not on in-depth examination of features of peer relations likely to be especially relevant to girls. Additionally, girls were of special interest because they have been understudied in research on children's peer relations in general, and in studies employing the experimental familiar–unfamiliar play group paradigm in particular (Cillessen, van IJzendoorn, van Lieshout, & Hartup, 1992; Coie & Kupersmidt, 1983; Dodge, 1983; Schwartz, Dodge, & Coie, 1993). This lack of attention to girls' peer relations is surprising given prominent arguments for the central importance of relationships in female development (Maccoby, 1995). For these reasons, the present study examined the relationship between anxious solitary girls' behavior and treatment by female peers. The aim of this approach is to examine peer interaction among girls rather than to make gender comparisons.

Overview. The current study aimed to contrast anxious solitary girls' behavior and interactions with (a) familiar versus unfamiliar peers, and (b) behaviorally normative girls. These aims address the overarching issues of (a) cross-situational continuity and change in anxious solitary girls' interaction patterns and (b) individual differences in interaction patterns between behavioral groups.

We expected that anxious solitary girls would approach new peer situations with characteristic wariness, but if they receive less negative responses from unfamiliar peers than they might have anticipated, elements of their behavior may improve, resulting in a behavioral pattern in the new environment that still suggests anxiety but also demonstrates the potential for change. We also anticipated that situational differences would be strongest for anxious solitary girls because familiar and unfamiliar situations should differ most for girls who are often mistreated by familiar peers.

Method

Participants

Participants were 209 assenting fourth-grade girls ($M=9.77$ years old, $SD=.46$ years) with informed parental consent. Equal numbers of African American and European American girls were recruited for the larger study

from which the current sample was drawn. Girls attended 13 urban and suburban elementary schools in a midsize city in the Southeastern United States. Girls were diverse and representative of the community with regard to family socioeconomic status (SES) (Hollingshead SES: $M=41.68$, $SD=13.85$; families scored across the full range of the scale: 14.00–66.00; Hollingshead, 1975). Consent rate was 90.01% for girls invited to participate in the play group study.

Seventy-two percent of students ($n=1,397$) in the targeted fourth-grade classrooms provided peer nominations. Classroom teachers provided assessments for girls selected for the play group study.

Identification of Targeted Behavioral Groups

In the first phase of the study, girls were identified as a member of either the anxious solitary or behaviorally normative comparison group based on their behavior among familiar peers at school. To avoid confounds between anxious solitary versus aggressive behaviors and peer treatment, girls were disqualified from these groups if they scored high in either direct or indirect aggression. Too few girls were identified as both anxious solitary and aggressive ($n=8$) to permit analysis of this group.

Each identifying characteristic of these groups was assessed by three sources: teacher reports, naturalistic observation of peer interactions in the school lunchroom, and classmate nominations. For each targeted behavior (anxious solitude, direct aggression, and indirect aggression), a multi-informant composite was created from the best two out of three sources. The multi-informant anxious solitude composite was constructed from teacher and observer reports because these indexes demonstrated the most internal consistency. Direct and indirect aggression multi-informant composites were constructed from teacher and peer reports because instances of aggression were rare in lunchroom observation data.

Anxious solitude. Anxious solitude was assessed through teacher report and behavioral observation in a naturalistic school setting in the winter of fourth grade. The teacher assessment of anxious solitude was adapted from the Teacher Checklist of Social Behavior (Coie, Terry, Underwood, & Dodge, 1992) and the social avoidance subscale of the Social Anxiety Scale for Children–Revised (SASC–R; LaGreca & Stone, 1993; see also LaGreca, Dandes, Wick, Shaw, & Stone, 1988). Our teacher report anxious solitude subscale consisted of five items: "This girl is timid about joining other children and usually stays just outside the group without joining in." "This girl is anxious and insecure in social situations." "This girl feels shy even with kids she knows well." "This girl usually plays or works alone." "This girl is too shy to make friends." Items were rated on a 5-point scale ranging from 1 (*never true*) to 5 (*usually true*). Mean scores on this subscale were employed in the multi-informant anxious solitude composite.

Girls' lunchtime behavior was rated for degree of peer social interaction and solitary onlooking behavior (watching peers without initiating contact). Live (unvideotaped) observations of girls' naturalistic peer interactions were coded during school lunch periods on 5 consecutive days during the spring semester of fourth grade. On the 1st day of coding, a team of coders spent 1 hr in the targeted classroom before lunchtime to familiarize themselves with the girls and their classmates. No coding took place during this classroom familiarization period. Subsequently, a coder observed each girl during one 10-min section of the 30-min lunch period. After each 10-min observation period, coders rated degree of social interaction and onlooking solitary behavior on a 3-point scale (0=none, 1=some, 2=a lot). Ratings were completed 5 times per girl and scores are based on a total of 50 min of observation (10 min \times 5 days). Thirteen percent of the observations were completed simultaneously by two coders to assess interrater reliability (peer social interaction $\kappa=.88$, onlooking solitary behavior $\kappa=.88$). The mean of these two observational ratings was employed in the multi-informant anxious solitude composite.

The multi-informant anxious solitude composite is the mean of standardized teacher report and observed anxious solitude. This composite demonstrated acceptable internal consistency ($\alpha=.82$).

Direct aggression. Direct aggression was assessed by teacher and peer report. Teachers rated girls' directly aggressive behavior on the 11-item aggressive–dominant subscale of the Teacher Checklist of Social Behavior (Coie et al., 1992). Example items include: "This girl uses physical force, or threatens to use physical force, in order to dominate other kids." "This girl says mean things to peers, such as teasing or name calling." Items were rated on a 5-point scale ranging from 1 (*never true*) to 5 (*usually true*). The mean of this scale was employed in the multi-informant direct aggression composite.

Peer assessment of direct aggression was obtained with the nomination "someone who fights a lot." Peer nominations were administered in classrooms late in the fall semester of fourth grade to ensure that children were well acquainted with their classmates. Research staff read items aloud to the class and instructed children to mark the names of classmates who fit each description on their individual class roster. Peers nominated an unlimited number of their classmates for each item. Cross-sex nominations were allowed, given that there is evidence that this adds to reliability (Terry & Coie, 1991). Each girl's score on a particular nomination was equal to the sum of the nominations she received. Nomination scores were standardized within classroom to control for variations in classroom size.

The multi-informant direct aggression composite was calculated as the mean of standardized teacher and peer reports. This composite demonstrated acceptable internal consistency ($\alpha=.94$).

Indirect aggression. An indirect aggression composite was calculated from teacher and peer reports. Teachers rated girls' indirectly aggressive behavior on five items developed by Crick (1996). Example items include: "This girl tries to exclude certain peers from group activities." "This girl spreads rumors or gossips about some peers." "When angry at a peer, this girl tries to get other children to stop playing with the peer or stop liking the peer." Items were rated on a 5-point scale ranging from 1 (*never true*) to 5 (*usually true*). The mean of this scale was employed in the multi-informant indirect aggression composite.

The peer assessment of indirect aggression was obtained with the nomination "someone who leaves others out and tries to get other kids not to like someone." Procedures for administering and scoring this nomination were identical to those described earlier for direct aggression.

The multi-informant indirect aggression composite was calculated as the mean of standardized teacher and peer reports. This composite demonstrated acceptable internal consistency ($\alpha=.91$).

Behavioral grouping procedures. Girls were identified as anxious solitary if they scored ≥ 1 *SD* on the multi-informant anxious solitude composite and < 1 *SD* on the multi-informant direct and indirect aggression composites. Girls were identified as behaviorally normative if they scored < 1 *SD* on multi-informant anxious solitude, direct aggression, and indirect aggression composites. Of the 209 girls who participated in the play groups, 24 girls were identified as anxious solitary and 129 as behaviorally normative. The proportion of the sample that was identified as anxious solitary (11%) is representative of the proportion of anxious solitary children identified in the research literature (10%–15% across studies). The proportions of anxious solitary girls who were African American (58%) and European American (42%) did not differ ($\chi^2=0.67$, *ns*), neither did the proportions of behaviorally normative girls who were African American (43%) and European American (57%; $\chi^2=2.80$, *ns*).

Ethic and Sociometric Composition of Play Groups

Play groups were composed to achieve balance in girls' ethnicity and sociometric status among their fourth-grade classmates. Participants in each play group were of the same ethnicity, with half of the play groups composed of African American girls and half composed of European American girls ($n=48$ familiar and 48 unfamiliar play groups; the study N of 209 is not an even multiple of 5 because girls who participated in only one familiarity condition were eliminated from this report). This play group composition was designed to capture girls' naturalistic interaction patterns (girls attended schools that were predominantly African American or European American) and to eliminate the possibility that a girl might be disliked or mistreated by peers by virtue of being an ethnic minority within the play group (Graham & Juvonen, 2002; Kistner, Metzler, Gatlin, & Risi, 1993).

The sociometric composition of play groups was designed to provide a reasonable approximation of the social dynamics of the classroom. Familiar groups were composed to reflect girls' sociometric choices so as to create a microcosm of the girls' group relations in the larger classroom. Each play group was composed of one rejected girl, one popular girl, and three average sociometric status girls, for a total of five girls. Sociometric status among fourth-grade classmates was calculated according to standard procedures using "someone you like the most" (LM) and "someone you like the least" (LL) nominations (Coie, Dodge, & Coppotelli, 1982). Procedures for administering these nominations were identical to those described earlier for direct aggression. These nominations were also scored in a similar manner except that they were weighted by the number of nominations a nominator made, such that nominations from a classmate who made few nominations were weighted more than nominations from a classmate who made many nominations (Terry, 2000). Rejected girls scored low ($\leq -1 SD$) in social preference (LM-LL), popular girls scored high ($\geq 1 SD$) in social preference, and average girls had moderate social preference scores (ranging from $> -1 SD$ to $< 1 SD$; in addition, average girls could not score high [$\geq 1 SD$] on both LM and LL because this configuration defined controversial status or low on both LM and LL [$\leq -1 SD$] because this configuration defined neglected status). Best friend pairs (girls who reciprocally nominated each other as "very best friend") were excluded from participation in the same familiar group because these relationships might have affected play group dynamics.

There was a tendency for anxious solitary girls to be overrepresented among rejected girls and underrepresented among popular girls ($\chi^2=5.44, p<.10$), as anticipated. Play groups were designed such that 20% of girls were rejected, 20% were popular, and 60% were of average social status among their fourth grade-classmates. Yet 38% ($n=9$) of anxious solitary girls were rejected (accounting for 67.5% of the deviation from expected frequency), 8% ($n=2$) were popular (accounting for 30.0% of the deviation from expected frequency), and 54% ($n=13$) were of average social status (accounting for only 2.5% of the deviation from expected frequency). These results are consistent with the findings of other investigations indicating that anxious solitary children constitute a substantial proportion of children who are rejected by their peers (Cillessen et al., 1992; French, 1988, 1990).

Play Group Procedures

Each girl participated in both a familiar play group of five female classmates and an unfamiliar play group of five unacquainted girls. Familiar play groups were conducted during the spring semester of fourth grade and unfamiliar play groups were conducted during the summer after fourth grade. Play groups were held in university laboratory observation rooms that were equipped with audio and video recording equipment (placed behind one-way observation windows) and contained space for play, a table, and shelves with several individual- and group-oriented games and age-appropriate toys. For familiar play groups, five girls from the same classroom were picked up from school by a member of the research staff and driven home after participating in the play group. For unfamiliar play groups, girls were each picked up and returned home by different members of the research team to ensure that they did not interact outside of the play sessions. To insure that unfamiliar group members were initially unacquainted, before scheduling the first unfamiliar play

session each girl was told the name and school of her potential unfamiliar playmates and was asked whether she knew them.

Each play group met for 1 hr daily for 5 consecutive days. Each session started with a structured play activity introduced by the experimenter. The experimenter left the room after introducing the initial activity and the girls directed their own play thereafter. Play was monitored from the recording room and experimenters intervened only in rare instances. After each play session, each girl was individually interviewed to obtain behavioral nominations and sociometric rankings for her playmates.

During the 3rd and 4th days of play group, each girl left the room to be individually interviewed and then reentered the ongoing play group interaction 5 min later, yielding two entry episodes per girl. At a later date, coders observed and rated girls' videotaped global interactions during the entire 3rd and 4th days of play group, and entry interactions during the 5 min following play group reentry.

Playmate Nominations

After each play session playmates were interviewed individually, for a total of five post-play interviews on consecutive days per familiarity condition. Each girl was asked to nominate playmates who were anxious solitary: "Did anyone act shy around the girls in your group, play alone a lot, or seem afraid to be around other kids?" Nominations were unlimited; girls could nominate as many playmates as they chose. Each girl's score on this nomination was equal to the sum of the nominations she received. Girls were also asked to rank their playmates according to whom they liked most. "Who did you like the most of all the girls in your group? The next most?" and so forth. Each girl's score was equal to the mean ranking she received, with higher scores reflecting higher social ranking among playmates. Inspection of mean ranking scores revealed that they were normally distributed.

Play Group Interaction Coding

Global ratings. Global ratings for each girl are based on a total of 110 min of observation [2 days × (60-min play period – 5-min absence)] from the entire play group session on Days 3 and 4 (the mean of Day 3 and Day 4 ratings). These days were chosen for coding because individual differences in peer interaction patterns were expected to emerge in the unfamiliar group by these later sessions. Girls' behavior and interactions were rated on nine typically indexed dimensions of social behavior (Rubin, Bukowski, & Parker, 1997). *Socially effective* captured general social competence, including social perceptiveness, leadership and norm-setting ability, communication effectiveness, and overall behavioral maturity. *Socially awkward* captured the frequency with which the girl had difficulty in being a smooth group participant or seemed unsure of her social behavior, out of sync with others, and unaware of group norms. *Prosocial* captured concern for others as exhibited through sharing, helping, or comforting behavior. *Annoying* captured behavior that appeared to irritate playmates, including whining, complaining, or repetitive behavior. *Bossy* captured orders directed at playmates, and demanding, pushy, or controlling behavior. *Directly aggressive* captured direct verbal or physical aggression. *Indirectly aggressive* captured attempts to harm indirectly another girl's relationships through exclusion or negative gossip. *Victimized* captured the frequency with which a girl was the target of direct or indirect aggression, or both. These dimensions were rated on a 3-point frequency scale (1=never or rarely, 2=sometimes, 3=very often). *Apparent acceptance* reflects the coder's assessment of the girl's social status or degree to which she appeared to be liked by playmates. This dimension was rated on a 3-point scale (1=rejected by most playmates, 2=average social status among playmates, 3=popular among most playmates). All global ratings demonstrated acceptable interrater reliability (κ s=.69–.85).

Entry episode ratings. Entry episode ratings are based on the first 5 min after the target girl reentered their play group after a 5-min absence on Days 3 and 4 (ratings conducted at 1 min and 5 min postentry were combined, and the overall score is the mean of Day 3 and Day 4 ratings), for a total of 10 min (2 days × 5-min postentry play period). Entry ratings were made on five dimensions. *Entry competence* captured how well the entering girl approached and attempted to enter ongoing interactions, including making comments relevant to the ongoing activity and fitting into current group behaviors. *Entry success* captured the degree to which the entering girl became assimilated into the group activity. *Quantity of interaction* captured the amount of verbal and behavioral interaction exhibited and received by the entering girl. *Response by playmates* captured the degree to which playmates' reactions to the entering girl were positive or negative, with higher ratings reflecting more positive and less negative responses. *Other orientation* captured the degree to which the entering girl displayed interest in her playmates. These ratings were made on a 5-point scale ranging from 1 (*very low*) to 5 (*very high*).

Talk about self captured the degree to which the entering girl talked about herself, including bragging and self-centered behavior. *Aversive behavior* captured degree to which the entering girl displayed negative behavior, including disagreements, interruptions, and insults. These dimensions were rated on a 3-point scale (0=low, 1=moderate, 2=high).

Additionally, the entering girl was rated for the degree she displayed positive, angry, and sad affect. These ratings were made on 4-point scales (0=not sad, 1=slightly sad, 2=somewhat sad, 3=highly sad). All entry episode ratings demonstrated good interrater reliability (κ s=.75–1.00).

Frequency of communication during play group entry episodes. Additionally, verbatim transcripts were made of the girls' utterances and nonverbal communicative gestures during the 1st min after each target girl reentered the play group after a 5-min absence on Days 3 and 4, for a total of 2 min (2 days × 1-min post-entry play period). Frequencies of communication (both verbal and nonverbal) were determined for both the entry child and the group members. Group members' statements were separated into the frequency of statements directed toward the entry child and the frequency of group statements that did not address or refer to the reentering girl in the minute following her reentry. This latter measure can be thought of as an index of indirect exclusion (being left out of peer activity).

Results

Overview of Playmate Nomination Analyses

First, we examined the emergence and change in unfamiliar playmates' perceptions of girls' anxious solitude and reported liking over five play sessions and compared these patterns with those reported by familiar playmates. Both initial peer perceptions after the 1st day of play group and change in peer perceptions over five play group sessions were analyzed with growth curve analysis (Bryk & Raudenbush, 1992; Raudenbush & Bryk, 2002) using multilevel modeling (SAS proc mixed). Both familiar and unfamiliar trajectories were examined within a single growth curve model for each dependent variable. Ethnicity and SES were examined in each model.

Multilevel modeling is a two-step procedure. First, the trajectory of the dependent variable over time is estimated for every individual at Level 1. The purpose of this unconditional analysis is to test whether there is enough individual variation in trajectories relative to the overall trajectory of all girls in the sample to warrant specifying between-subjects variables in the second step of analyses. If significant individual variation is found,

the second step of analysis examines between-subjects independent variables (behavioral group) at Level 2. This second step of analysis is referred to as conditional. The Level 2 dependent variables are the individual intercepts and slopes derived from Level 1 analyses.

Multilevel modeling yields parameters for groups that have trajectories that deviate significantly from the overall trajectory of other girls in the sample. Discussion of the resulting trajectory estimates is supplemented by *t* tests calculated within SAS proc mixed that permit comparison of estimated group trajectories at specific time points.

Unconditional Models

In the first step of analysis, unconditional growth curve models of playmate-perceived anxious solitude and liking were tested. Before performing unconditional analyses of the two-level models described earlier, unconditional analyses of three-level models were performed in which individual play groups (each play group composed of five girls) constituted Level 3. These unconditional analyses revealed no significant variation among play groups at Level 3. This result is not surprising given that play groups were expressly created to be uniform in regard to multiple characteristics (sex, race, SES). Because it is not appropriate to predict variation at a level of the model in which unconditional analyses indicate there is no significant variation, the third level of the model was dropped and two-level analyses were performed. Unconditional two-level analyses indicated there was significant individual variation relative to the overall anxious solitude and liking trajectories in both the familiar and unfamiliar contexts (see random effects in Table 1). Each unconditional model indicated that there was significant variation to be accounted for both in the intercept (Day 1 levels of anxious solitude and liking) and in one or more slopes (linear and quadratic), indicating change over time in playmate perceptions. Therefore, it was reasonable to expect that a between-subjects variable such as behavioral group might predict peer perception trajectories that differ from the overall pattern in the sample. Thus, the hypothesized trajectories were examined by specifying behavioral group as a Level 2 between-subjects independent variable in conditional analyses.

Table 1

Unconditional Growth Curve Models

Fixed effect	Anxious solitary nominations						Liking rankings					
	Familiar			Unfamiliar			Familiar			Unfamiliar		
	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>
Model for initial status, π_{0i}												
Mean	0.26	0.05	5.39***	0.54	0.05	10.07***	2.55	0.04	58.59***	2.66	0.04	68.68***
initial status, β_{00}												
Model for linear change, π_{1i}												
Mean	-0.12	0.04	-2.78**	-0.37	0.05	-7.28***	-0.01	0.01	-0.64	-0.03	0.01	-2.49*
change rate, β_{10}												
Model for quadratic change, π_{2i}												
Mean	0.03	0.01	2.69**	0.07	0.01	6.29***						
change rate, β_{20}												
Random effect	Variance	SE	Z	Variance	SE	Z	Variance	SE	Z	Variance	SE	Z
Initial status, r_{0i}	0.34	0.05	7.16***	0.43	0.06	7.35***	0.29	0.04	7.48***	0.21	0.03	6.60***

Linear change rate, r_{1i}	0.20	0.04	4.99***	0.32	0.05	6.11***	0.004	0.002	1.71*	0.01	0.003	4.10***
Quadratic change rate, r_{2i}	0.01	0.002	4.28***	0.01	0.003	5.35***						
Level 1 error, ^a e_{ii}	0.15						0.17					

Note. $N=209$.

^a Level 1 error is reported for the whole model including both situations.

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

Conditional Models

Anxious solitude nominations. The purpose of growth curve analysis of peer anxious solitude nominations was to examine the emergence and change in unfamiliar playmates' perceptions of anxious solitude over five play sessions and to compare these patterns with those of familiar playmates. Results indicated that both unfamiliar and familiar playmates perceived anxious solitary girls as significantly more anxious solitary than other girls after the first play session (see Table 2 and Figures 1a and 1b; only significant effects are graphed here and in subsequent figures) and that more unfamiliar than familiar playmates perceived anxious solitary girls as anxious solitary (difference between unfamiliar and familiar anxious solitary group coefficients on Day 1: .50, $t=3.52$, $p<.001$). Additionally, unfamiliar and familiar playmates' perceptions of anxious solitary girls displayed different patterns of continuity and change over time. In familiar play groups, playmate perceptions of elevated anxious solitude in anxious solitary girls were maintained parallel to the slightly declining trajectory of other girls over time. In contrast, in unfamiliar play groups, playmate perceptions of elevated anxious solitude in anxious solitary girls declined significantly more rapidly than the trajectory of other girls. Although unfamiliar playmates, compared with familiar playmates, initially perceived anxious solitary girls as demonstrating significantly higher anxious solitude on Day 1, they subsequently perceived anxious solitary girls as increasingly less anxious solitary relative to familiar playmates through Day 4 (difference between unfamiliar and familiar anxious solitary group coefficients on Day 2: .02, $t=.13$, ns ; Day 3: $-.26$, $t=-1.75$, $p<.10$; Day 4: $-.33$, $t=-2.21$, $p<.05$; Day 5: $-.19$, $t=-1.14$, ns). Although anxious solitary girls' estimated anxious solitary trajectory shows a slight increase in the unfamiliar situation on Day 5, their means demonstrate no similar Day 5 increase (see Figure 1). Rather, means reveal that unfamiliar playmates' perceptions of anxious solitude in anxious solitary girls decreased rapidly from Day 1 to Day 2 and then remained low throughout subsequent unfamiliar play sessions. Thus, the slight Day 5 upturn appears to be the best trajectory that growth curve analysis can estimate using polynomials when the data are asymptotic (approaches the horizontal axis without subsequently departing from that axis). Therefore, results suggest that unfamiliar playmates initially perceived anxious solitary girls as highly anxious solitary but subsequently perceived them as less anxious solitary than familiar playmates, whereas familiar playmates consistently perceived anxious solitary girls as anxious solitary over 5 days.

Table 2

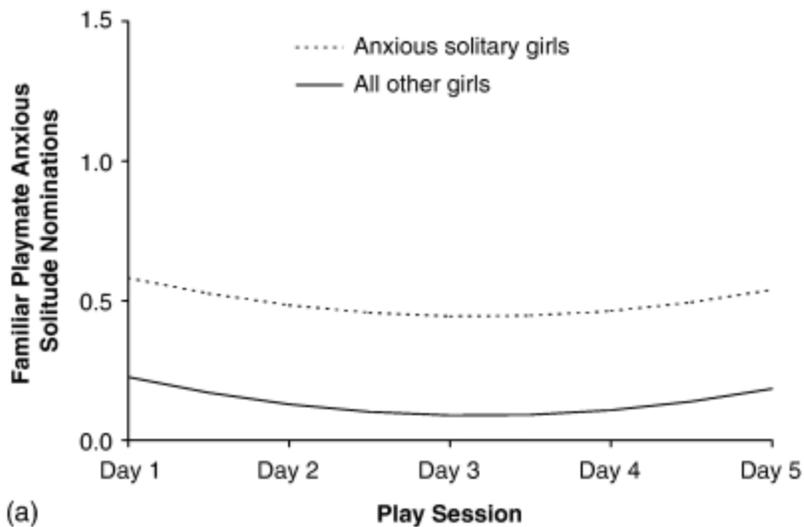
Conditional Playmate Anxious Solitude Nominations Model: Familiar and Unfamiliar Play Groups

Level of model	Playmate anxious solitude nominations		
	Coefficient	SE	t

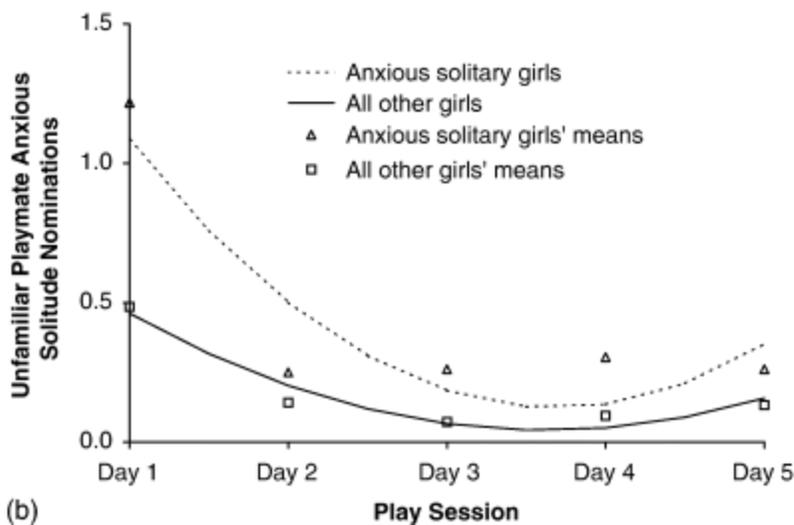
Familiar play group			
Model for initial status, π_{0i}			
Mean initial status, β_{00}	0.23	0.04	5.08 ^{***}
Anxious solitary group, β_{01}	0.35	0.13	2.67 ^{**}
Model for linear change, π_{1i}			
Mean change rate, β_{10}	-0.13	0.05	-2.78 ^{**}
Anxious solitary group, β_{11}	-0.02	0.13	-0.16
Model for quadratic change, π_{2i}			
Mean change rate, β_{20}	0.03	0.01	2.76 ^{**}
Anxious solitary group, β_{21}	-0.01	0.03	-0.22
Unfamiliar play group			
Model for initial status, π_{0i}			
Mean initial status, β_{00}	0.46	0.05	10.16 ^{***}
Anxious solitary group, β_{01}	0.62	0.13	4.70 ^{***}
Model for linear change, π_{1i}			
Mean change rate, β_{10}	-0.32	0.05	-6.95 ^{***}
Anxious solitary group, β_{11}	-0.40	0.14	-2.94 ^{**}
Model for quadratic change, π_{2i}			
Mean change rate, β_{20}	0.06	0.01	5.74 ^{***}
Anxious solitary group, β_{21}	0.07	0.03	2.33 [*]

Note. $N=209$.

* $p<0.5$. ** $p<.01$. *** $p<.001$.



(a)



(b)

Figure 1. Playmate-perceived anxious solitude trajectories over five play sessions in (a) familiar play groups and (b) unfamiliar play groups. On Day 1, the group identified as anxious solitary among fourth-grade classmates was perceived as significantly more anxious solitary than other girls by both familiar and unfamiliar playmates, but unfamiliar playmates perceived this group as significantly more anxious solitary than did familiar playmates. On subsequent days, familiar playmates continued to perceive the anxious solitary group as maintaining elevated anxious solitude. In contrast, unfamiliar playmates perceived the anxious solitary group as significantly less anxious solitary over time. Although anxious solitary girls were initially perceived as significantly more anxious solitary by unfamiliar than familiar playmates, this pattern was subsequently reversed such that they were perceived as significantly less anxious solitary by unfamiliar playmates on Day 4.

An additional version of this anxious solitary growth curve model was performed while controlling for classroom sociometric status. Results were not substantially changed. Another version of this anxious solitude growth curve model was tested for the main effects of race and SES, as well as for interactions between anxious solitary group membership, race, and SES. No significant main or interaction effects for SES emerged. However, results indicated that African American girls were perceived as slightly more anxious solitary by their same-race unfamiliar playmates than European American girls (intercept coefficient=.06, $t=2.91$, $p<.01$). The effects of other variables were not substantially changed by the addition of race to the model.

Liking rankings. The purpose of growth curve analysis of peer liking was to examine the emergence and change in unfamiliar playmates' reports of liking over five play sessions and to compare these patterns with those reported by familiar playmates. Results indicated that both familiar and unfamiliar playmates ranked anxious

solitary girls significantly below the mean in liking after the first play session and over the course of the four remaining play sessions (see Table 3; no figure is provided as initial differences remained relatively stable over time). However, familiar playmates ranked anxious solitary girls significantly lower in liking than unfamiliar playmates during the first four play sessions, although this difference diminished somewhat over time (difference between unfamiliar and familiar anxious solitary group coefficients on Day 1: .32, $t=2.77$, $p<.01$; Day 2: .30, $t=2.54$, $p<.05$; Day 3: .27, $t=2.29$, $p<.05$; Day 4: .25, $t=2.03$, $p<.05$; Day 5: .22, $t=1.77$, $p<.10$). These results were maintained after controlling for direct aggression, a well-established correlate of sociometric status (indirect aggression was not controlled for because it was not a significant predictor of liking trajectories).

Table 3

Conditional Playmate Liking Rankings Model: Familiar and Unfamiliar Play Groups

Level of model	Playmate liking rankings		
	Coefficient	SE	t
Familiar play group			
Model for initial status, π_{0i}			
Mean initial status, β_{00}	2.62	0.04	65.82***
Anxious solitary group, β_{01}	-0.44	0.12	-3.73***
Direct aggression, β_{02}	-0.24	0.04	-6.53***
Model for linear change, π_{1i}			
Mean change rate, β_{10}	-0.01	0.01	-1.01
Anxious solitary group, β_{11}	0.05	0.04	1.51
Direct aggression, β_{12}	0.00	0.01	-0.28
Unfamiliar play group			
Model for initial status, π_{0i}			
Mean initial status β_{00}	2.69	0.04	66.91***
Anxious solitary group, β_{01}	-0.19	0.12	-1.60††
Direct aggression, β_{02}	-0.03	0.04	-0.82
Model for linear change, π_{1i}			
Mean change rate, β_{10}	-0.02	0.01	-2.01*
Anxious solitary group, β_{11}	-0.03	0.04	-0.76
Direct aggression, β_{12}	-0.03	0.01	-2.94**

Note. $N=209$. †† $p<.11$. * $p<.05$. ** $p<.01$. *** $p<.001$.

An additional version of playmate liking growth curve models was performed while controlling for classroom sociometric status. In the familiar play group, anxious solitary girls were significantly less well liked by playmates even after controlling for sociometric status and aggression (intercept coefficient: $-.25$, $t=-2.20$, $p<.05$). In the unfamiliar play group, anxious solitary girls were not significantly less well liked than other girls after controlling for sociometric status and aggression (intercept coefficient: $-.06$, $t=-.54$, ns). This result again suggests that dislike of anxious solitary girls was less well established in the unfamiliar play groups.

Additional versions of playmate liking growth curve models were also tested for the main and interaction effects involving race and SES. Results indicated that when anxious solitary girls were of high rather than low family SES, familiar playmates tended to like them better initially and that this pattern was maintained over

time (Anxious Solitary Group \times Centered SES intercept coefficient=.01, $t=1.75$, $p<.10$). No other significant interaction effects for race or SES emerged.

Overview of Observational Analyses

To examine why playmate perceptions of anxious solitude declined over time in the unfamiliar context, we next examined observed behavior and interactions on the 3rd and 4th days of play group, a period in which the playmate nominations suggested that situational differences in behavior had emerged. We were interested in both whether observations would corroborate situational differences in playmates' perceptions of anxious solitary girls' behavior and whether observations would reveal situational differences in playmates' treatment of anxious solitary girls.

Preliminary Observational Analyses

We first examined whether race should be considered while analyzing behavioral group and situational effects on girls' observed play group interactions. Because race and SES are often confounded, we statistically controlled for SES while examining race. A 2 (race: European American, African American) \times 2 (behavioral group: anxious solitary, behaviorally normative) \times 2 (situation: familiar, unfamiliar) repeated measures multivariate analysis of variance (MANOVA) with family SES as a covariate was performed on all play group observational ratings. Results revealed a significant main effect for race (multivariate [m.] $F=1.82$, $p<.05$), such that European American girls, compared with African American girls, displayed significantly more annoying behaviors (European American: $M=1.30$, $SD=.49$; African American: $M=1.15$, $SD=.34$; univariate [u.] $F=12.44$, $p<.001$) and were more victimized by their playmates (European American: $M=1.19$, $SD=.40$; African American: $M=1.13$, $SD=.34$; u. $F=7.59$, $p<.01$). No significant main effect for SES or significant interactions involving race or SES emerged. Because behavioral group and situational effects did not appear to be qualified by race or SES, subsequent analyses were conducted by collapsing across racial groups and SES.

Analysis of Global Play Group Interactions

Next, we examined behavioral group and situational effects on girls' global behavior and interactions during the entire 3rd and 4th days of play group. A 2 (behavioral group: anxious solitary, behaviorally normative) \times 2 (situation: familiar, unfamiliar) repeated measures MANOVA was performed on observed global behavior and interaction. Results indicated significant main effects for behavioral group (m. $F=2.87$, $p<.01$) and situation (m. $F=3.81$, $p<.001$), but no significant interaction between behavioral group and situation (m. $F=1.35$, ns ; see Table 4).

Table 4

MANOVA and Mean Observer Ratings in Familiar and Unfamiliar Play Groups by Behavioral Group

Observer rating of play group interaction	Behavioral			Behavioral		Behavioral	
	Behavioral group	Situation	Behavioral group \times Situation	Familiar play group	Unfamiliar play group	Behaviorally normative	Anxious solitary
	<i>F</i>	<i>F</i>	<i>F</i>	Behaviorally normative	Anxious solitary	Behaviorally normative	Anxious solitary

				<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
Global ratings							
Multivariate effects	2.87**	3.81***	1.35				
Socially effective	10.37**	0.55	1.11	1.58	1.14	1.45	1.16
Socially awkward	12.07***	8.20**	6.63*	1.19	1.61	1.18	1.32
Prosocial	6.16*	2.04	0.49	1.33	1.18	1.29	1.05
Annoying	2.02	11.42***	5.18*	1.25	1.50	1.18	1.16
Bossy	4.86*	0.76	0.37	1.54	1.25	1.41	1.23
Directly aggressive	0.55	8.83**	1.19	1.52	1.36	1.18	1.20
Indirectly aggressive	1.53	2.97†	0.60	1.41	1.25	1.23	1.18
Victimized	14.52***	9.56**	2.66†	1.16	1.50	1.09	1.27
Apparent acceptance	15.46***	0.06	1.02	2.16	1.73	2.08	1.77
Entry episode ratings							
Multivariate effects	3.03**	1.26	0.59				
Entry competence	15.78***	0.15	1.38	3.62	2.91	3.43	3.01
Entry success	25.37***	0.05	2.37	3.71	2.73	3.54	2.96
Quantity of interaction	19.90***	0.44	1.29	3.75	3.01	3.54	3.07
Playmate response ^a	15.38***	1.37	4.01*	3.58	3.16	3.53	3.36
Other orientation	9.78**	0.79	0.60	3.89	3.41	3.68	3.40
Talk about self	0.03	1.71	0.03	0.45	0.45	0.37	0.35
Aversive behavior	0.01	3.11†	0.13	0.27	0.25	0.14	0.17
Positive affect	4.63*	0.22	0.40	1.77	1.50	1.67	1.52
Angry affect	0.58	4.47*	0.14	0.10	0.15	0.03	0.05
Sad affect	0.00	0.08	2.03	0.00	0.03	0.02	0.00

Note. Global ratings: normative $n=128$, anxious solitary $n=22$. Entry ratings: normative $n=127$, anxious solitary $n=21$.

^a Larger numbers indicate more positive and less negative playmate responses.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Follow-up univariate analyses of variance (ANOVAs) revealed differences between behavioral groups across situations. As expected, across situations, anxious solitary girls compared with behaviorally normative girls were rated by observers as significantly less socially effective (u. $F=10.37$, $p < .01$), more socially awkward (u.

$F=12.07, p<.001$), less actively prosocial (u. $F=6.16, p<.05$), less bossy (u. $F=4.86, p<.05$), more victimized by playmates (u. $F=14.52, p<.001$), and—consistent with playmate sociometric rankings—less accepted by playmates (u. $F=15.46, p<.001$).

Situational effects also emerged in follow-up univariate ANOVAs. Girls exhibited more behavioral signs of anxiety in the familiar versus unfamiliar situation. Results indicated that in the familiar versus unfamiliar situation, girls, on average, displayed significantly more socially awkward behavior (u. $F=8.20, p<.01$). Results also indicated that the familiar situation was characterized by a more aversive atmosphere. Results indicated that in the familiar versus unfamiliar situation, girls, on average, displayed significantly more directly aggressive behavior (u. $F=8.83, p<.01$), marginally more indirectly aggressive behavior (u. $F=2.97, p<.10$), and significantly more annoying behavior (u. $F=11.42, p<.001$), and they were significantly more victimized (u. $F=9.56, p<.01$). Given the more aversive nature of the familiar play groups, it is perhaps not surprising that girls displayed more behavioral signs of anxiety in this context.

Results suggest that, relative to behaviorally normative girls, anxious solitary girls' behavior was affected more negatively by the more aversive atmosphere in the familiar context. There were larger situational differences in anxious solitary compared with behaviorally normative girls' socially awkward behavior (u. $F=6.63, p<.05$). Anxious solitary girls demonstrated significantly more socially awkward behavior (simple effects $t=2.63, p<.05$) in the familiar than in the unfamiliar context, whereas behaviorally normative girls demonstrated less situational variation (simple effects $t=0.38, ns$). These results, taken together with unfamiliar playmates' declining perceptions of anxious solitude over time, suggest that anxious solitary girls demonstrated a reduction in shy, solitary, and socially awkward behaviors in the less aversive later unfamiliar play sessions. Additionally, there were larger situational differences in anxious solitary compared with behaviorally normative girls' annoying behavior (u. $F=5.18, p<.05$) and victimization (u. $F=2.66, p\leq.10$). Anxious solitary girls demonstrated significantly more annoying behavior (simple effects $t=2.73, p<.05$) and were more victimized (simple effects $t=2.22, p<.05$) in the familiar than in the unfamiliar context, whereas behaviorally normative girls demonstrated less situational variation (simple effects: annoying $t=1.47, ns$; victimized $t=1.96, p<.10$).

A version of these MANOVAs was also performed while controlling for classroom sociometric status. Situation main effects remained virtually unchanged. Although main effects for anxious solitary group were reduced in magnitude, the pattern of findings remained significant (except that differences in bossiness dropped to marginal significance). These results suggest that anxious solitary girls encounter difficulty in peer interactions beyond the effects of their sociometric status. The univariate Anxious Solitary Group \times Situation interaction term for socially awkward behavior remained significant after controlling for sociometric status, but the univariate interaction effects for annoying behavior and victimization became nonsignificant. These results suggest that it was anxious solitary girls of low sociometric status, rather than all anxious solitary girls, who were particularly victimized and demonstrated particularly annoying behavior in familiar play groups.

To examine direction of effect in the relationship between anxious solitude and peer victimization, partial correlation analyses were performed (relevant victimization data were available only for Days 3 and 4; see Table 5). Results indicate that familiar playmates' perceptions of anxious solitude on Day 4 were significantly and positively associated concurrent observed victimization after controlling for victimization on the previous day. This association was significant in both the whole sample and the anxious solitary group but tended to be of greater magnitude in the anxious solitary group. Analyses also tested the reverse direction of effect. Namely, in familiar play groups, observed victimization on Day 4 was positively associated with concurrent peer perceptions of anxious solitude after controlling for anxious solitude on the previous day. Again, the magnitude of this association tended to be stronger for anxious solitary children but was also present in the whole sample. It is interesting that the magnitude of effects was similar in either direction. Thus, in familiar play groups, evidence suggests a transactional relationship between anxious solitude and peer victimization; victimization may lead to increased anxious solitude, which in turn may increase a child's vulnerability to victimization. Beyond support for this transactional relationship in the familiar play groups, the most striking patterns in Table 5 are contextual differences. In contrast to the positive associations found in familiar play groups, partial

associations were reversed (negative) and less significant in the unfamiliar play groups. Whereas mutually reinforcing transactions between anxious solitude and peer victimization appeared to occur in the familiar play groups, the unfamiliar play groups seemed to be governed by a different dynamic. Additional analyses revealed that these transactions were rapid (concurrent change controlling for the previous day) rather than delayed, and that transactions also occurred between annoying behavior and victimization (see Table 5).

Table 5

Partial Correlations and Correlations Between Observed Victimization by Playmates and Playmate-Perceived Anxious Solitude or Observed Annoying Behavior

	Familiar play group		Unfamiliar play group	
	Partial <i>r</i>	<i>r</i>	Partial <i>r</i>	<i>r</i>
	Anxsol Day 4 Controlling Day 3	Anxsol Day 4	Anxsol Day 4 Controlling Day 3	Anxsol Day 4
Whole sample				
Victimization Day 4	.24 ^{***}	.25 ^{***}	.05	.20 ^{**}
Anxious solitary group only				
Victimization Day 4	.46 [*]	.46 [*]	-.18	-.26
	Vic Day 4 Controlling Day 3	Victimization Day 4	Vic Day 4 Controlling Day 3	Victimization Day 4
Whole sample				
Anxious Solitude Day 4	.23 ^{***}	.25 ^{***}	.10	.20 ^{**}
Anxious solitary group only				
Anxious Solitude Day 4	.43 [*]	.46 [*]	-.38 [†]	-.26
	Annoy Day 4 Controlling Day 3	Annoy Day 4	Annoy Day 4 Controlling Day 3	Annoy Day 4
Whole sample				
Victimization Day 4	.30 ^{***}	.38 ^{***}	.25 ^{**}	.28 ^{***}
Anxious solitary group only				
Victimization Day 4	.75 ^{***}	.79 ^{***}	.36	.52 [*]
	Vic Day 4 Controlling Day 3	Victimization Day 4	Vic Day 4 Controlling Day 3	Victimization Day 4
Whole sample				
Annoying Behavior Day 4	.22 ^{**}	.38 ^{***}	.26 ^{***}	.28 ^{***}
Anxious solitary group only				
Annoying Behavior Day 4	.75 ^{***}	.79 ^{***}	.52 [*]	.52 [*]

Note. anxsol=Anxious solitude; Vic=victimization; Relevant victimization data were available only on Days 3 and 4.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Analysis of Play Group Entry Episodes

Next, we examined behavioral group and situational effects on girls' behavior and interaction during the 5 min after their reentry to ongoing play group interaction. A 2 (behavioral group: anxious solitary, behaviorally normative) \times 2 (situation: familiar, unfamiliar) repeated measures MANOVA was performed on observed entry behavior and interaction. Results indicate a significant main effect for behavioral group (m. $F=3.03$, $p<.01$), but no significant main effect for situation (m. $F=1.26$, ns), or interaction between behavioral group and situation (m. $F=0.59$, ns).

As expected, follow-up univariate ANOVAs revealed significant differences between anxious solitary and behaviorally normative girls' interactions during the 5 min following their reentry to play group. Across familiar and unfamiliar contexts, anxious solitary girls compared with behaviorally normative girls were rated as significantly less competent in attempts at entry (u. $F=15.78$, $p<.001$), less successful at entry (u. $F=25.37$, $p<.001$), engaged in less quantity of interaction (u. $F=19.90$, $p<.001$), less interested in playmates (other orientation; u. $F=9.78$, $p<.01$), and less affectively positive (u. $F=4.63$, $p<.05$), and they received more negative and less positive responses from playmates (u. $F=15.38$, $p<.001$). These group differences in entry interactions are consistent with group differences in global interactions. Taken together, results indicate that anxious solitary girls, relative to behaviorally normative girls, demonstrated less effective social behavior and were more negatively treated by playmates.

Follow-up univariate ANOVAs revealed that playmates' responses to anxious solitary girls' reentry relative to behaviorally normative girls' reentry differed by situation (u. $F=4.01$, $p<.05$). There was a greater discrepancy in playmate responses to reentering anxious solitary girls versus behaviorally normative girls in the familiar (simple effects $t=4.08$, $p<.001$) than in the unfamiliar (simple effects $t=1.98$, $p<.05$) context, such that anxious solitary girls received especially negative responses from familiar playmates upon reentry relative to behaviorally normative girls. These findings complement results from analyses of girls' global interactions, indicating that anxious solitary girls displayed more awkward and annoying behaviors and were more victimized in the familiar context, whereas behaviorally normative girls demonstrated less situational variation. It may be that anxious solitary girls' particularly heightened awkward and annoying behaviors (whining, complaining, repetitive behavior) in the familiar context resulted, in part, from the especially heightened negative treatment they received in this context.

A version of these MANOVAs was also performed while controlling for classroom sociometric status. The pattern of main effects for anxious solitary group remained robustly significant. These results suggest that anxious solitary girls encounter marked difficulty in group reentry beyond the effects of sociometric status. Also, situational effects maintained the same significance levels. However, the Anxious Solitary Group \times Situation interaction for playmate response became nonsignificant. This result suggests that it was anxious solitary girls of low sociometric status, rather than all anxious solitary girls, who, upon reentry, received particularly negative responses from familiar playmates.

Analysis of Frequency of Communication During Play Group Entry Episodes

As anticipated, during the 1st min after their reentry to play group across both contexts, anxious solitary girls contributed a significantly smaller proportion of all communication made in the play group than did other entry girls ($\chi^2=40.26$, $p<.001$). Reentering anxious solitary girls made one fourth (25%) of the communications occurring in the play groups, whereas other reentering girls made one third (33%) of the communications occurring in the play groups. Furthermore, during the minute after reentry across both contexts, a significantly larger proportion of playmates' communications did not address or refer to the reentering girl when she was anxious solitary rather than non-anxious-solitary ($\chi^2=51.94$, $p<.001$). Approximately two thirds (65%) of playmates' communications did not address or refer to reentering anxious solitary girls. In contrast,

approximately half (54%) of playmates' communications did not address or refer to reentering non-anxious-solitary girls. This result suggests that anxious solitary girls experienced more indirect exclusion than did other girls upon play group reentry. Overall, communication frequency results are consistent with the preceding analyses indicating that anxious solitary girls engaged in less interaction and were less positively received by peers than other girls across contexts. Similar to the previous entry episode behavior analyses, these 1-min frequency counts did not yield contextual differences similar to those apparent in analysis of longer global play group interactions.

Discussion

Taken together, results support both cross-situational continuity and change in anxious solitary girls' social behavior and peer relations. Although girls identified as anxious solitary among their familiar classmates subsequently exhibited difficulty interacting with both familiar and unfamiliar playmates relative to behaviorally normative girls, elements of their behavior appeared to improve in unfamiliar play groups, a context in which they received less peer mistreatment.

Cross-Situational Continuity

Anxious solitary girls' behavioral patterns differed from those of behaviorally normative girls across contexts. Compared with behaviorally normative girls, anxious solitary girls were initially perceived by playmates as more anxious solitary and were observed to be more socially awkward; less socially effective, prosocial, and bossy; and, during play group reentry, to demonstrate less entry competence, entry success, quantity of interaction, frequency of communication, interest in playmates, and positive affect. Because these findings held across familiarity contexts, results suggest that anxious solitary girls carry a fearful, avoidant orientation toward the social world into new social situations. These findings suggest that, by middle childhood, anxious solitude is, in part, "in the child."

Anxious solitary girls also received more mistreatment from playmates than behaviorally normative girls across both familiar and unfamiliar contexts. Compared with behaviorally normative girls, anxious solitary girls were less well accepted and more victimized in general, and, upon attempts to reenter ongoing play group interactions, received more negative playmate responses and more indirect exclusion from playmate conversation. Because girls had no prior history of interaction with unfamiliar playmates, the emergence of unfamiliar playmates' mistreatment of anxious solitary girls suggests that anxious solitude contributes to girls' vulnerability to peer mistreatment, as anticipated.

Differences in Familiar and Unfamiliar Situations

In addition to continuities in anxious solitary girls' behavior and peer treatment across contexts, situational differences in girls' interactions with playmates also emerged. Results indicated that familiar play groups were characterized by a more aversive atmosphere than unfamiliar play groups. Girls, on average, displayed more aversive behaviors (both direct and indirect aggression) and were more victimized by playmates in familiar play groups than in unfamiliar play groups. These findings are consistent with our expectation that victimization is most likely to occur in social groups when disparate social status and, thus, relative power and vulnerability are firmly established. Furthermore, these findings support our contention that, over time, it may be more stressful for children to interact with familiar than unfamiliar peers if patterns of habitual mistreatment are established among familiar peers.

Situational Sensitivity in Anxious Solitary Girls

We had anticipated that familiar play groups would be more stressful than unfamiliar play groups for anxious solitary girls because they were more likely than other girls to be mistreated by familiar playmates. Consistent with this expectation, anxious solitary girls who were rejected received especially negative responses from familiar playmates during play group reentry and tended to be especially victimized by familiar playmates. These results suggest that anxious solitary girls who are rejected and mistreated by familiar peers may, at least for a limited time, receive somewhat better treatment by unfamiliar peers. However, victimization trends must be substantiated by further work. Anxious solitary girls were also observed to display improved social behavior (less peer-perceived anxious solitary behavior and less observed socially awkward and annoying behaviors) during the third and fourth unfamiliar play sessions relative to the familiar play sessions. Anxious solitary girls displayed more anxious solitary and awkward behaviors in familiar than in unfamiliar contexts even after controlling for sociometric status, suggesting that all anxious solitary girls experienced the familiar situation as uniquely anxiety provoking. It is interesting that effects for annoying behaviors were applicable only to anxious solitary girls who were rejected, suggesting that their heightened annoying behaviors in the familiar context may either contribute to or result from their social status and mistreatment among familiar peers. Indeed, partial correlations suggested bidirectional transactions between annoying behavior and victimization across contexts. These behaviors may reflect social immaturity, anxiety, or attention seeking rather than intentional annoyance. Such behavior may be an interesting subject for future research and intervention.

Were anxious solitary girls able to act more competently in the unfamiliar context because they were better treated by unfamiliar peers, or were anxious solitary girls better treated by unfamiliar peers because they behaved more competently in the unfamiliar context? Partial correlations suggest mutually exacerbating transactions between anxious solitude and playmate victimization only in the familiar play groups, but not the unfamiliar play groups. Furthermore, evidence from growth curve analyses and supplementary time-point-specific *t* tests of playmates' anxious solitude nominations indicated that anxious solitary girls initially demonstrated more anxious solitary behavior during the first unfamiliar play session than during the first familiar play session. Thus, it does not seem plausible to argue that unfamiliar peers' better treatment of anxious solitary girls during the latter days of play group can be attributed to more competent behavior in the initial play group sessions. Rather, the pattern of results appears more consistent with the explanation that anxious solitary girls displayed less signs of social anxiety (shy, solitary, and socially awkward behaviors) during the later unfamiliar play group sessions because they experienced less negative treatment by unfamiliar peers in these sessions than they typically did at the hands of familiar peers. Thus, results also suggest that anxious solitude is, in part, "in the situation."

Theoretical Implications

Results suggesting that girls' social behavior is a function of both individual and situational characteristics support a child by environment model of social behavior (e.g., Cairns et al., 1996; Magnusson, 1988; Sameroff, 1993). In this model, children's social interactions result from a dynamic interplay between the particular propensities the child brings to the social context and the particular demands and opportunities the social context presents to the child. Despite the behavioral continuity anxious solitary girls displayed across interactions with familiar and unfamiliar peers, elements of their behavior also showed some improvement over time in the unfamiliar context in which they received less peer mistreatment. Thus, although anxious solitude appears to identify children's characteristic way of responding across social situations, these behavioral patterns nonetheless appear somewhat responsive to less threatening social environments.

Findings also suggest that peer mistreatment of children in general is more likely to occur among peers who are well acquainted with each other as opposed to those who were previously unacquainted. It may be that children

are most likely to victimize or exclude others when they perceive a well-established consensus among peers that a certain child is low in social status and therefore vulnerable—especially if other deterrents, such as friends, are not in place (Boivin & Hymel, 1997; Hodges et al., 1997; Hodges & Perry, 1999; Schwartz et al., 2001). If a child is not favored by most other playmates, treating that child poorly may carry little risk of peer disapproval and may even offer some social benefits. For example, exclusion and victimization may establish a connection among those who are included or who passively observe victimization and may demonstrate the excluder or aggressor's relatively higher social position—a message that may be implicit in onlooking peers' reactions to peer exclusion and victimization. This rationale is consistent with results indicating correspondence among girls' social status and victimization (anxious solitary girls were both more disliked, as reported by peers, and observed to be more victimized by familiar than unfamiliar playmates). However, attitudinal consensus among peers may contribute to a child's vulnerability to peer mistreatment only when such sentiments are expressed overtly (e.g., through gossip). Although there were signs that anxious solitary girls were low in social status even in the unfamiliar play groups, this pattern may not yet have constituted shared social knowledge to the same degree as in the familiar play groups. This logic also leads us to speculate that anxious solitary girls might become equally victimized in the unfamiliar group if interactions were extended over a longer period because some potential precursors of victimization (e.g., low liking) were already present.

Implications for Intervention

Results suggest that placing an anxious solitary child who is having peer difficulties in a different school context as the sole means of ameliorating her peer relations may meet with limited success. Although anxious solitary girls received less peer mistreatment in unfamiliar contexts, they were nevertheless still more mistreated than their behaviorally normative counterparts in this relatively less aversive context, and it is unclear whether improved peer treatment would persist long term. Long-term improvement in anxious solitary children's peer interaction patterns may require a comprehensive approach addressing individual-level characteristics of the anxious child (Beidel & Turner, 1998) as well as school- or classroom-level tolerance for peer exclusion and mistreatment (Paley, 1992), perhaps in combination with direct assistance with developing specific positive peer relationships (Rubin, Hymel, Mills, & Rose-Krasnor, 1991) and a change in school context. Although a change in school context may often not be practical or desirable for a variety of reasons, the naturalistic reshuffling of children at the start of every new school year may provide an opportune period for interventions to take place with less reputational resistance (Hymel, Wagner, & Butler, 1990).

Present results also suggest that group-entry skills would be an important component of individual-level interventions designed for anxious solitary children. Anxious solitary girls' group-entry skills appeared less affected by contextual factors than other more global aspects of their behavior. These findings suggest that group entry is an especially difficult task for anxious solitary children. Anxious solitary children may experience fear of social rejection most intensely when approaching others socially, effectively exposing themselves to negative evaluations and mistreatment on the part of social partners.

Contributions and Limitations

Although the Anxious Solitary Group \times Situation interaction effects we obtained were few in number and limited to univariate effects, they support our expectations that contextual changes were particularly salient for anxious solitary girls, particularly those who were rejected. Such interaction effects are theoretically important in testing child by environment models of development and examining situationally contingent individual change. In the future, however, it will be important to investigate such relations in a sample containing a larger number of anxious solitary children to further test the strength of effects.

It is also important to acknowledge that examining the emergence of peer rejection in a new peer group in children who have a history of peer rejection is not equivalent to examining the initial emergence of children's peer rejection. Children with a history of peer rejection may carry expectations about being rejected from past situations into new contexts. In this regard the child may be a vehicle through which past situations influence novel situations. Thus, it could be said that to some degree the "situation is in the child" and it may not be possible to entirely separate the two.

Relative to previous cross-contextual investigations of anxious solitary children, the present investigation's within-subjects repeated measures design served as a stronger basis for documenting cross-situational change as well as continuity. This design revealed not only support for cross-situational continuity in anxious solitary behavior, consistent with previous investigations (Schneider et al., 2000; Schneider et al., 1998; Stewart & Rubin, 1995), but it also revealed situational change in some elements of anxious solitary children's behavior and peer relations, a result novel relative to past findings. Additionally, this investigation provides a unique window on how unfamiliar peers' perceptions of anxious solitary children change rapidly over relatively brief periods of interaction.

Present findings are of particular significance because they were obtained with gender and ethnic groups underrepresented in the relevant research literature. Results support the proposition that anxious solitude constitutes a social risk for girls (Serbin et al., 1998). This finding is of particular importance because social risk in anxious solitary girls is often downplayed relative to social risks of larger magnitude in boys (Caspi et al., 1988; Coplan et al., 2001; Gazelle & Ladd, 2003; Morison & Masten, 1991; Rubin et al., 1993; Stevenson-Hinde & Glover, 1996). Thus, despite sex differences in magnitude, it appears that the same fundamental relationship between anxious solitude and vulnerability to peer mistreatment exists for girls and boys.

Furthermore, the present investigation of anxious solitude within American racial subcultures extends previous cross-cultural research on social withdrawal (e.g., Chen, Rubin, & Sun, 1992; Hart et al., 2000; Schwartz et al., 2001). Results suggest that anxious solitude is equally prevalent and related to social risk in both African American and European American female youth subpopulations within the United States. This result contradicts the popular lay notion that extreme shyness is less common among African Americans than among European Americans (Anonymous, 1996; McDaniel, 2001). Negative concomitants of anxious solitude in both of these groups suggest that they may share an American cultural valorization of outgoing, self-assertive personality. Although these initial findings provide much-needed information on anxious solitude within American ethnic subpopulations, future work with larger samples of anxious solitary children will be needed to lend confidence to findings regarding ethnicity.

Also in a contextual vein, differences were found in familiar playmates' liking of anxious solitary girls of high versus low SES. There are a number of mechanisms through which this contextual factor may have served as a particularly salient buffer or risk factor for children who were vulnerable to peer difficulties by virtue of their anxious solitary behavior, for example, more attractive clothing or more socially enriching experiences. This result is a reminder that behavioral differences are embedded in larger contexts that may subtly color their interpretation. Investigation of individual differences and the environmental conditions that perpetuate or minimize them over time promises greater understanding of multilevel interactional processes involved in individual continuity and change.

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