The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school

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Abstract

This paper is on the influences of the classroom context on the course and malleability of aggressive behavior from entrance into first grade through the transition into middle school. Nineteen public elementary schools participated in developmental epidemiologically based preventive trials in first and second grades, one of which was directed at reducing aggressive, disruptive behavior. At the start of first grade, schools and teachers were randomly assigned to intervention or control conditions. Children within each school were assigned sequentially to classrooms from alphabetized lists, followed by checking to insure balanced assignment based on kindergarten behavior. Despite these procedures, by the end of first quarter, classrooms within schools differed markedly in levels of aggressive behavior. Children were followed through sixth grade, where their aggressive behavior was rated by middle school teachers. Strong interactive effects were found on the risk of being highly aggressive in middle school between the level of aggressive behavior in the first grade classrooms and each boy’s own level of aggressive, disruptive behavior in first grade. The more aggressive first grade boys who were in higher aggressive first grade classrooms were at markedly increased risk, compared both to the median first grade boys, and compared to aggressive males in lower aggressive first grade classrooms. Boys were already behaving more aggressively than girls in first grade; and no similar classroom aggression effect was found among girls, although girls’ own aggressive behavior did place them at increased risk. The preventive intervention effect, already reported elsewhere to reduce aggressive behavior among the more aggressive males, appeared to do so by reducing high levels of classroom aggression. First grade males’ own poverty level was associated with higher risk of being more aggressive, disruptive in first grade, and thereby increased their vulnerability to classroom level of aggression. Both boys and girls in schools in poor communities were at increased risk of being highly aggressive in middle school regardless of their levels of aggressive behavior in first grade. These results are discussed in terms of life course/social field theory as applied to the role of contextual influences on the development and etiology of severe aggressive behavior.
The start of school is a major transition in almost all societies. The child is faced with social task demands first by parents, then by teachers, and then by classmates, who comprise the main peer group of that stage of life. The new context of the first grade classroom presents great challenges and potential influences on later development. Young children shift from living primarily within the social field of their family to spending a major portion of their day with a stranger, the teacher, who poses new social task demands such as *sit still and pay attention, do not fight or be disruptive, raise your hand and participate, and learn to read and do arithmetic*. Getting along with 30 or so classmates poses another set of social task demands. Aggressive, disruptive behavioral responses to these demands, as early as in the first grade classroom, have been repeatedly shown to be an important antecedent of later aggressive behavior, conduct disorders, and drug abuse, particularly when coupled with shy/socially isolating behavior (Block, Block, & Keyes, 1988; Ensminger, Kellam, & Rubin, 1983; Farrington, Gallagher, Morely, St. Ledger, & West, 1988; Farrington & Gunn, 1985; Hans, Marcus, Henson, Auerbach, & Mirsky, 1991; Kellam, Brown, Rubin, & Ensminger, 1983; McCord, 1988; Robins, 1978; Schwartzman, Ledingham, & Serbin, 1985; Shedler & Block, 1991). The potential mediating and moderating role of the social context of the classroom in this developmental psychopathological course is an important focus for understanding etiology and potential prevention programs and is the focus of this paper.

We report here on the influence of classmates’ level of aggressive behavior in the first grade classroom on the course of each child’s own aggressive behavior from entrance into first grade through the transition into middle school. We examine the malleability of the course of aggressive behavior through a preventive intervention trial implemented over first and second grades directed at the social system of the classroom aimed at aggressive behavior (Dolan et al., 1993; Kellam et al., 1991; Kellam, Mayer, Rebok, & Hawkins, in press; Kellam & Rebok, 1992; Kellam, Rebok, Ialongo, & Mayer, 1994).

Poverty at the school/individual levels may be playing important roles in contextual effects on the developmental course of aggressive behavior, and may confound analyses of classroom aggression effects if not included in these analyses. Wicks–Nelson and Israel (1984) report that lower social class children exhibit more aggressive behavior than children from higher socioeconomic status. School and classroom environments may be where the processes leading to this relationship are found, around issues of success or failure to meet the social task demands of the classroom. We therefore include in our modeling the classroom level of poverty, as well as the child’s own poverty.

Our understanding of how higher and lower aggressive, disruptive classrooms might influence development will be informed by the extent of shared perspectives regarding who behaves aggressively among classmates and teachers in higher and lower aggressive classrooms. We, therefore, assess the extent to which teacher and classmates agree with each other and with independent observers as to which children are aggressive, disruptive in the higher as well as lower aggressive classrooms.

There is a growing body of literature that underscores the importance of contextual influences beyond the family on children’s healthy or pathological development and behavior (see for example, Bronfenbrenner, 1979, 1989; Kellam, Branch, Agrawal, & Ensminger, 1975; Kellam, 1994; Sameroff, 1994). With continuing importance of family in the context of community, entrance to school requires the transition into classroom and peer group. Early in elementary school the social fields of the classroom and peer group overlap ecologically, and the social task demands of the two social fields may be in conflict with each other if the classmates are reinforcing aggressive, disruptive behavior on the one hand, while the teacher is attempting to establish a good learning environment on the other (Barker, 1996; Eder, 1981; Kellam, 1994; Kellam et al., 1975; Kellam et al., 1983; Kellam & Ensminger, 1980; Kellam & Rebok, 1992; Silbereisen & Todt, 1994; Steinberg & Darling, 1994; Wicks–Nelson & Israel, 1984).

Research findings suggest that placing
children in a homogeneous classroom context, by such practices as tracking or ability grouping, with other children who are poor achievers or poor behaving not only widens the academic gap between these children and children in higher level academic tracks, but these children also have different behavioral outcomes (Grant, 1991; Kershaw, 1992; Werthamer–Larsson et al., 1991). Children in lower track classrooms have been characterized to display more aggressive, disruptive behavior compared to their counterparts in higher track classrooms (Grant & Rothenberg, 1986; Haskins, Walden, & Ramey, 1983; Kershaw, 1992). The trajectory for the lower track children is such that when children are placed into a slower/lower academic track at an early age, it is usually difficult to shift into a higher track level later (Kershaw, 1992); therefore, these children often experience the same level of academic and social environment throughout their school years (Oakes & Lipton, 1990; Slavin, 1987). Research on classrooms and tracking is hindered by the confounding factors of family, school, and classroom in the assignment of children to classes. In this paper we report on studies of classrooms in which school and family influences were randomized and/or balanced. This makes it possible to study the specific contributions of the classroom environment on the child’s course of development.

Our conceptualization of normal and pathologic development and, in turn, the choice of our preventive interventions and their proximal and distal targets has been guided by life course/social field theory (Kellam et al., 1975; Kellam & Ensminger, 1980; Kellam & Rebok, 1992). The main tenets of this theoretical framework are that at each stage of life there are main social fields in which individuals are faced with social task demands. Within each social field, individuals are formally or informally rated on the adequacy of their performance by natural raters such as parents in the family, teachers in the classroom, peers within the peer group, significant others in the intimate social field, and supervisors in the workplace. In setting out the social task demands and assessing the adequacy of performance, natural raters may be more or less precise and effective in indicating the preferred responses. The theoretical focus in this paper is on the teacher and her/his consistency in defining appropriate social task demands and in reinforcing acceptable responses, and the important role of classmates in reinforcing behavior acceptable or not acceptable to the teacher. Moreover, when the social task demands overlap across social fields such as those of the teacher in the classroom and classmate/peers in the peer group, they may be in conflict with each other (Kellam et al., 1994; Silbereisen & Todt, 1994).

While the characteristics of the social field of the classroom, peer group, or family may enhance or inhibit adequate responses, each individual brings unique assets or decrements in his or her adaptive capacity to respond adequately to the social task demands. Life course/social field theory is centered on this interactive process of social task demands in specific social fields and the adequacy of behavioral responses as assessed by natural raters in specific social fields over the course of development (Kellam et al., 1997; Kellam & Ensminger, 1980; Kellam & Rebok, 1992; Kellam & Van Horn, 1997). We have termed this process of demand/response Social Adaptation and the adequacy of performance as rated by natural raters as Social Adaptational Status (SAS). In contrast to SAS, which is a social status measure within a small social field, psychological well-being (PWB) in the life course/social field framework refers to the individual’s internal state as reflected, for example, in symptoms of anxiety, depression, and other indices of distress such as affective or cognitive symptoms or disorders.

Life course/social field theory holds that early successful social adaptation tends to provide competencies through reinforcement by natural raters of successful performance of social task demands (Kellam et al., 1975). In the organizational approach to development, children’s competencies that have proven to be successful remain accessible in the face of later social task demands, ready to be activated and utilized during times of stress, crisis, novelty, and demands for adaptive innovation (Cicchetti & Schneider–Rosen, 1984). These competencies then are available for later adaptation as the individual traverses the life course in the same or in new social fields.
Pathological development, in contrast, may be conceptualized as a history of social maladaptation to earlier social task demands resulting in a lack of the social, emotional, and cognitive competencies that are important in achieving later social adaptation and psychological well-being. The theory also holds that PWB and SAS are intimately and often reciprocally related, such that PWB is in part determined by the natural rater’s ratings of the adequacy of the individual’s performance (Ensminger et al., 1983; Kellam et al., 1983; Kellam & Rebok, 1992). In a reciprocal fashion, PWB may either facilitate or inhibit successful social adaptation.

Based on these tenets of life course/social field theory, we hypothesized that the classroom context markedly influences the developmental course of aggressive behavior. Aggressive, disruptive behavior has been shown to be influenced by the other children in the peer groups (Battistich et al., 1995). Dishion, Spracklen, Andrews, and Patterson (1996) reported that aggressive youths laugh at rule breaking and generally reinforce aggressive, disruptive behavior. In contrast, in mixed groups of aggressive and nonaggressive youths, reinforcement was associated with pro-social behavior. Relatedly, Patterson, Reid, and Dishion (1992) argue that as with parents, high rates of aggressive, disruptive behavior may cause teachers to react in a more ineffective, irritable and coercive fashion with their students, thereby reinforcing students’ disruptive and coercive behavior.

Our hypothesis is that a child who responds maladaptively to a teacher’s demands for pro-social behavior will be at greater risk for long term aggressive behavior if they begin schooling in a classroom in which most other children are also aggressive, compared to children with the same level of aggressive behavior but who are in lower aggressive classrooms. We used the preventive intervention trial aimed at the social adaptational processes involving teacher and peers to shed light on the hypothesized mediating and moderating processes underlying the classroom contextual influences on the developmental continuity of aggressive behavior. We hypothesize that the social field of the classroom and its social task demands by teacher and by classmates enhances or inhibits the developmental trajectories of children with early aggressive, disruptive behavioral responses to the teacher. Furthermore, we hypothesized that an intervention that improved this social adaptational process of teacher’s and classmates’ demands will diminish the risk of continuing aggressive behavior through early adolescence.

In this paper, we first assess the extent of variation in classroom aggressive, disruptive behavior at the end of the first quarter in first grade, and whether the variation is within and/or across schools. We then assess whether the variation in classroom aggressive behavior occurs together or separately with the variation in classroom poverty. With this information we test in control classrooms the first developmental hypothesis that higher levels of classroom aggressive behavior will result in enhanced risk of later aggressive behavior; and second, that first graders who are more aggressive will be at greater risk of later aggressive behavior if they are in higher aggressive first grade classrooms. We next hypothesize that individual or classroom level of poverty will not explain this classroom aggression contextual effect. We previously reported a positive effect of the preventive intervention on the risk of being very aggressive in middle school among the more aggressive first grade males, but not females (Kellam, Rebok, Ialongo, & Mayer, 1994). We, therefore, tested and report here as to whether this intervention effect occurred mainly among such males in higher aggressive first grade classrooms.

Method

Design and the study population

These studies of classroom context effects on the developmental course of aggressive behavior were done as a central part of two concurrent developmental epidemiologically based preventive trials, one of which was directed at aggressive behavior through modifying classroom levels of aggressive, disruptive
behavior. It is most salient to classroom effects on aggressive behavior and is reported in this paper. The other was directed at improving achievement in first graders and, because of space and complexity, will not be reported here. The population was drawn from five relatively large urban areas in the eastern half of Baltimore: (a) a White ethnic low to middle income area, with married couple families living in well-maintained row houses in close proximity to extended family members; (b) a predominantly African American very low to low income area, with multigenerational families living in large public housing projects; (c) a totally African American middle income area, with multigenerational families living in fairly well maintained row houses; (d) a racial/ethnic integrated middle income area, with married couple families living in detached frame houses; and (e) a predominantly White moderate income area, with married couple families living in small detached or semidetached homes.

In each of the five areas, three or four public elementary schools were matched in a total of 19 schools, and each was randomly assigned to an intervention or to an external matched control condition. Within each intervention school, teachers were assigned randomly to classrooms and to intervention conditions. The children were assigned sequentially to internal control classrooms or to an intervention classroom, and their balance checked by kindergarten performance, with reassignment if necessary to achieve balance. The total population consisted of 1,196 children who entered the first grades during the 1985–1986 academic year in the 19 schools. The population was 49% male. Sixty-four percent of the sample was African American, 29% White, and 7% represented other ethnic groups. At baseline the average age of the first grade children was 6 years 4 months old. All 41 first grade teachers from all 19 schools consented to participate in the study. We were unable to obtain ratings from one classroom of 23 children due to the illness and resulting absenteeism of the teacher. This was the only classroom in one of the control schools. This changed the number of schools to 18 and the number of teachers and classrooms to 40. In schools with two classrooms, one was randomly chosen as intervention and the other control; in schools with three classrooms, two were randomly assigned as intervention and the third control. The demographic representativeness of the 18 schools was not different than the 19. All analyses in this paper involving aggressive behavior are based then on 18 schools and 40 teachers and classrooms. When poverty is considered by itself in the studies of variation in levels of poverty in first grade, 41 classrooms are included. At the end of the first quarter when the first ratings were done, 1,084 of the initial 1,196 children were still enrolled and were rated by their teachers. The missing 112 were identified as children who were no longer enrolled in the 19 public schools, students in the classroom not rated due to teacher illness, or children of parents who refused to participate (5.1% of parents refused to participate).

The second analyses involved 1,084 children who received teachers’ ratings in the fall of first grade who were still in Baltimore City Public Schools and remained in the same intervention condition over first grade. Of these 1,084 children, 682 received teachers’ ratings in middle school 6 years later. In studying the missing children (402), T tests revealed no differences between the 682 rated by teachers in first grade and middle school and the 402 that were not rated in terms of the first grade ratings. For males, the mean of first grade teachers’ ratings of aggressive behavior was 2.08 (SD = 1.10) among those rated in middle school and 2.04 (SD = 1.11) for those not rated in middle school, with t = .39 (df = 525), p > .05. For females, the mean of first grade teachers’ ratings of aggressive behavior was 1.64 (SD = .78) among those rated and 1.69 (SD = 72) among those not rated, with t = 77 (df = 555), p > .05.

Membership in the same classroom was maintained through the 2 years of the intervention, but in third grade and thereafter the schools were free to assign children to any classrooms, possibly based on the children’s behavior and achievement. There were 238 children who received the Good Behavior Game (GBG) intervention in eight classrooms; 168 children were in the six GBG in-
ternal control classrooms; 308 children were in the 11 external control classrooms. The children in the achievement condition were omitted in the analyses for this paper, but the 680 children in the seven achievement control classrooms were included as part of the control population reported here, for a total of 376 control children. All of the control children together represent epidemiologically the total population of first grade and middle public school attendees, and are used in the analyses of developmental course without intervention. Generalizations about the long-term classroom contextual influences should be made to the public school children who remained in public schools in the first grade.

**The GBG intervention**

The GBG is a classroom team-based behavior management strategy that promotes good behavior by rewarding teams that do not exceed maladaptive behavior standards as set by the teacher. After baseline measurement of behavior, children in GBG classrooms were assigned to one of three heterogeneous teams, and points were given to the team if one of the children committed an aggressive, disruptive behavior defined beforehand by the teacher. All teams could win during a particular game period. The teacher determined team membership, making sure that teams contained equal numbers of boys and girls, equal numbers of aggressive, disruptive children, and equal numbers of shy, socially isolated children. The goal of the strategy was to create an integrated classroom social system with little aggressive, disruptive behavior, supportive of all children being able to learn. The methods were to have teachers clearly define unacceptable behaviors and to socialize children to regulate their own and their teammates’ behavior through a process of team contingent reinforcement.

During the first weeks of the intervention, the GBG was played three times each week for a period of 10 min. Over successive weeks the duration increased approximately 10 min per game period every 3 weeks, up to a maximum of 3 hr, with the checkmark criterion for winning the game remaining at four. Initially, game periods were announced and the rewards were delivered immediately after the game. Later, the teacher initiated the game period without announcement and the rewards were delayed until the end of the school day or week. Over time the game was played at different times of the day, during different activities. In this manner, the GBG evolved from a procedure that was highly predictable and visible with a number of immediate reward props to a procedure with an unpredictable occurrence and location with deferred rewards. Disruptive behaviors included verbal disruption, physical disruption, out-of-seat without permission, and noncompliance; these are reflected in the measures of aggressive disruptive behavior described below. Details of the training and the intervention strategy are provided in the *Good Behavior Game Training Manual* (Dolan, Turkkan, Werthamer, & Kellam, 1989). The teachers who participated received 40 hr of training.

**Measures**

Teacher observation of classroom adaptation-revised (TOCA-R). The TOCA-R is a measure of each child’s adequacy of performance on the core tasks in the classroom as rated by the teacher. It was originally developed and used in the Woodlawn studies (Kellam et al., 1975), and after modification has been used as a core periodic assessment instrument for the Baltimore prevention trials (Werthamer–Larsson, Kellam, Everett–Reynolds, & Baudry, 1994). Briefly, it involves a 2 hr structured interview in a private location in the school, administered by a trained member of the staff who follows a script precisely, responds in a standardized way to issues the teacher initiates, and records the teacher’s ratings of the adequacy of each child’s performance on three basic tasks: the one of central interest to this paper is Authority Acceptance, the maladaptive form being aggressive, disruptive behavior. Psychometric work involving item-whole correlations among the 10 items, for each year of administration from first report card in first to sixth grade through annual ratings by each teacher, reveal a range in alphas from .91 to .95 over this span of development.
Higher scores indicate more aggressive behavior. The TOCA-R was administered at the time of the first report card, in the spring of first and second grades, and in the spring of each year thereafter. The individual items that make up the aggressive construct of TOCA-R are **Breaks Rules**, **Breaks Things**, **Fights**, **Harms Others**, **Harms Property**, **Lies**, **Stubborn**, **Teases Classmates**, **Takes Others Property**, and **Yells at Others**.

**Peer assessment inventory.** The Peer Assessment Inventory is a measure based on each classmate’s nominations of each of the other children in the classroom. It is a classroom administered modified version of the Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Leibert, Weintraub, & Neale, 1976), in which all children in the classroom are eligible to be nominated on a set of attributions. While the teacher is being interviewed to obtain TOCA-R ratings of each child in the classroom, the Peer Assessment Inventory is administered by three staff members, who work through the trust issues, make use of practice questions, and then obtain nominations of as many of the classmates as each child thinks are like the item being asked about. In the early grades all children were photographed, after parent consent. The children were instructed to circle pictures of classmates, using a separate page, for each behavioral item. Three items from the peer assessments were used to measure aggressive, disruptive behavior. These were peer nominations of **Fights**, **Gets Into Trouble**, and **Acts Mean to Others**. The score for each child is the percentage of classmates who attribute a given characteristic to that child. The score represents the agreement among classmates about a specific child on that attribute.

**Independent behavior observation.** This is a measure based on time sampling in the classrooms and independent observers noting explicit aggressive, disruptive behaviors. These items were **Noncompliance**, **Verbal Disruption**, **Teasing Others**, **Turning in Seat**, **Out of Seat**, **Taking Others’ Property**, **Damaging Property**, **Attacking Others**. Two trained observers were sent to each classroom at four scheduled times the 1st year, before and after the TOCA-R ratings in fall and spring. They observed each first grader for 1 min at six consecutive 10-s intervals, recording the number of occurrences of each of eight explicit aggressive, disruptive behaviors. After each child’s minute of observations, the next child, chosen from a random list of classmates, was observed. Each observer rated 15 children and then overlapped for reliability measurement. After finishing all 15 children on the list, the observers repeated the procedure for a total of 10 min for each child that day. Details of the procedure employed for direct observation is provided in Volume II of the *First Stage Measures Manual*. The overall score used here was the sum of all aggressive, disruptive behavior measures per hour, weighted according to the classroom activity (Ling, 1996).

The dependent variable in the developmental modeling of classroom effects is being rated highly aggressive in middle school. The children do not have a single teacher in middle school, and we chose the English teachers since this subject is taught to all students, and the consensus among teachers was that these teachers were in the best position to rate the children.

**Results**

The first questions we address are the extent of variation in classroom aggressive, disruptive behavior and whether this variation occurs at the classroom or school levels or both. Variation in poverty is then examined also at the levels of school and classroom. The second set of analyses are concerned with the influence of the first grade classroom on the course of aggressive behavior into middle school. Separately by gender, individual levels of aggressive behavior and poverty are modeled along with contextual levels of aggressive behavior and poverty. The third set of analyses are concerned with the impact of the intervention on the course of aggressive behavior by adding intervention into the modeling from the second set of analyses. The reader should recall that one of the original 19 schools with only 1 classroom did not have teacher ratings of aggressive behavior due to
illness of the teacher (see Design and Study Population section). Analyses involving poverty, peer nominations, and independent observation of behavior without teacher ratings include all 19 schools and 41 classrooms. Analyses that involve teacher ratings of aggressive behavior are based on the 40 first grade classrooms with teacher ratings in the remaining 18 schools.

**Studies of variation in levels of first grade classroom and school aggressive behavior and poverty**

**Variation in levels of school and classroom aggression.** In the analyses of first grade variation in schools and classrooms we used the mean of teacher’s aggressive behavior TOCA-R ratings of each child in the classroom to characterize the classrooms in regard to levels of aggressive behavior. This variation in classrooms grouped by schools is represented in Figure 1. We used mixed model analyses to assess variation in aggressive behavior within and across classrooms and schools (random factors) by gender (fixed factor). Although there was some variation across schools, $F = 1.91, p = .076$, the more significant level of variation in aggressive behavior was among classrooms within schools, $F = 4.98, p < .001$.

Based on these classroom scores, the distribution appears clearly bimodal (see Figure 2). The classrooms were then dichotomized into lower and higher aggressive levels. Of the 40 classrooms, 24 were low aggressive and 16 high aggressive classrooms. In the low aggressive classrooms there were 457 children (227 males, 230 females) and 361 children in the high aggressive classrooms (181 males, 180 females).

The results of these analyses of variation also showed that there was a significant gender difference in the level of first grade aggression, $F = 71.72, p < .001$, and boys were found to be more aggressive ($M = 2.07$) than girls ($M = 1.65$).

**Validating the equivalence of teacher’s ratings of aggressive behavior across higher and lower aggressive classrooms.** While the results might support classroom effects on the risk of being highly aggressive in middle school, these findings might result from lower aggressive classroom teachers using the TOCA-R differently than teachers in higher aggressive classrooms. To test whether this happened, we used peer nominations and independent behavior observations to see if the teacher ratings of higher aggressive children (top quartile) were equivalent on these other measures in higher and lower aggressive classrooms. These analyses, summarized in Table 1, show that peer nominations and independent observations between higher and lower aggressive classrooms are quite similar in the fall of first grade for the teacher ratings of higher aggressive children. Based on these t-test analyses, there is no significant difference in the way teachers used the TOCA-R scales in lower aggressive and higher aggressive classrooms.

**Variation in levels of school and classroom poverty.** For purposes of assessing the effect of classroom poverty on each child’s course of aggressive behavior we needed to uncover the classroom’s poverty level from the individual child’s poverty. The measure of classroom poverty we used was the percentage of children receiving free lunch in each classroom. The child’s own measure was whether or not the child was receiving free lunch. In Figure 3 we present the distribution of classrooms by the percentage of children who received free lunch. These data clearly reflect a bimodal distribution of classrooms. Classrooms were divided into lower percentages of children receiving free lunch compared to higher percentages of children receiving free lunch. Of the 41 classrooms, 23 were in the lower free lunch category and 18 were higher free lunch category.

In contrast to the variation within schools in levels of classroom aggressive behavior, there was no variation among poverty levels of classrooms within schools, only across schools. The data in Table 2 reveal that within each school there was consistency, with all classrooms within school being either higher or lower percent receiving free lunch. This was unlike the distribution of classroom levels...
Figure 1. Aggressive behavior in the fall of first grade in each classroom within each school.

Figure 2. Distribution of classroom mean levels of aggression in the fall of first grade.
Table 1. Assessing the equivalence of TOCA-R ratings among the top quartile of aggressive children in higher and lower aggressive, disruptive behavior in the classrooms

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean $(SD)$ of Lower Aggressive Classrooms $(n = 457)$</th>
<th>Mean $(SD)$ of Higher Aggressive Classrooms $(n = 361)$</th>
<th>t Value</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer nominations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starts Fights</td>
<td>.35 (.17)</td>
<td>.35 (.17)</td>
<td>0.01</td>
<td>76</td>
<td>0.99</td>
</tr>
<tr>
<td>Mean to Others</td>
<td>.33 (.17)</td>
<td>.36 (.18)</td>
<td>0.42</td>
<td>76</td>
<td>0.42</td>
</tr>
<tr>
<td>Gets into Trouble</td>
<td>.49 (.18)</td>
<td>.44 (.22)</td>
<td>1.2</td>
<td>76</td>
<td>0.17</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starts Fights</td>
<td>.24 (.13)</td>
<td>.24 (.15)</td>
<td>0.15</td>
<td>44</td>
<td>0.88</td>
</tr>
<tr>
<td>Mean to Others</td>
<td>.31 (.26)</td>
<td>.26 (.13)</td>
<td>0.74</td>
<td>44</td>
<td>0.46</td>
</tr>
<tr>
<td>Gets into Trouble</td>
<td>.35 (.22)</td>
<td>.29 (.17)</td>
<td>1.28</td>
<td>44</td>
<td>0.21</td>
</tr>
<tr>
<td>Independent behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>observations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.86 (2.39)</td>
<td>2.24 (2.04)</td>
<td>1.38</td>
<td>96</td>
<td>0.17</td>
</tr>
<tr>
<td>Female</td>
<td>2.21 (2.49)</td>
<td>2.55 (4.73)</td>
<td>0.317</td>
<td>53</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Figure 3. Distribution of classroom mean levels of poverty in the fall of first grade.
Table 2. Distribution of classroom poverty among schools as indexed by free lunch

<table>
<thead>
<tr>
<th>Number of Classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Receiving Free Lunch</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

\( ^{a}n = 644. \)
\( ^{b}n = 552. \)

of aggressive behavior, in which the variation was mainly within schools.

Comparison of teacher ratings and peer nominations of aggressive, disruptive behavior in first grade higher and lower aggressive classrooms. In these analyses we assess the level of concordance between teacher’s and classmate’s views of the children’s aggressive disruptive behavior in higher and lower aggressive classrooms. We examine the correlations in higher and then in lower aggressive classrooms between the classmates nominations of each other on the three peer nomination items Gets Into Trouble, Acts Mean to Others, and Fights and the way teachers rate the children’s aggressive behavior by TOCA-R. The mean correlation between classmates’ nominations and teachers’ ratings across the 16 higher aggressive and the 24 lower aggressive classrooms ranged from about .50 to .70 across the 3 items and across genders, and did not differ significantly by higher and lower aggressive classrooms. With about 30 children in each of the 40 classrooms, these correlations point with confidence to a fairly high level of shared view as to aggressive, disruptive children. There was somewhat less agreement between classmates and teachers among girls than boys.

Studies of the role of first grade classroom context on the risk of being highly aggressive in middle school

Being highly aggressive in middle school was defined as one standard deviation beyond the mean of teacher ratings compared to the total control population in sixth grade. Table 3 illustrates the prevalence at the overall level and separately for each gender. We also recalculated the classroom context measures at this stage so that they measured the environment for each child excluding his or her own score.

This stage of analysis involves children in all of the control groups \((n = 680)\) to examine the role of contextual effects of aggression and poverty on the developmental epidemiological course of aggression and in the absence of an intervention in this representative population in eastern Baltimore. For these analyses we again present results separately for males and females.

We examined the roles of individual and first grade classroom aggression level, and the role of individual and school poverty, in predicting high aggressiveness in middle school 6 years later. We hypothesized first that classroom level of aggression in first grade would predict high aggressive behavior among males in middle school, after controlling for individual level of aggression. We next hypothesized that the predictive power of classroom aggression would vary with individual level of aggression. In other words, higher aggressive first grade males in higher aggressive classrooms would be more likely to be rated in middle school as highly aggressive, compared to the median child, or to high aggressive children in lower aggressive classrooms. The third hypothesis we tested was that the strength of prediction of individual and classroom levels of aggression would not be explained by either individual or classroom levels of poverty. In the last analyses we tested the hypothesis that the previously reported intervention effect on the course of aggressive behavior re-
Table 4. Effect of first grade boys’ individual aggressive behavior, first grade classroom level aggression, and first grade classroom poverty on risk of being highly aggressive in middle school (control classrooms only)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Log Odds Ratio</th>
<th>SE</th>
<th>Sig</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>First grade aggression</td>
<td>0.26</td>
<td>0.22</td>
<td>0.236</td>
<td>1.30</td>
<td>0.85–1.98</td>
</tr>
<tr>
<td>First grade classroom aggression</td>
<td>-2.63</td>
<td>1.09</td>
<td>0.016</td>
<td>0.07</td>
<td>0.01–0.61</td>
</tr>
<tr>
<td>Interaction: First grade aggression by classroom aggression</td>
<td>0.82</td>
<td>0.38</td>
<td>0.030</td>
<td>2.27</td>
<td>1.08–4.77</td>
</tr>
<tr>
<td>First grade classroom poverty</td>
<td>1.07</td>
<td>0.41</td>
<td>0.008</td>
<td>2.92</td>
<td>1.32–6.47</td>
</tr>
</tbody>
</table>

Note: Number of control boys used in this analysis was n = 202.

Results for boys. In Table 4 we present the results of the best fitted model. First grade boys who were initially rated as aggressive in first grade (top quartile) and were in a higher aggressive first grade classroom were far more likely to be rated highly aggressive in middle school compared to all other boys. In the lower aggressive classrooms, children at the same level of aggressive behavior were somewhat more likely to be aggressive in middle school, but much less at risk. There was a strong interaction between baseline aggressive behavior and classroom aggressive levels on the risk of being highly aggressive in middle school. Figure 4 indicates the odds ratio of being highly aggressive in middle school among individuals with different levels of first grade aggressive ratings, under higher and lower aggressive classroom contexts, compared with children with median baseline ratings (whose odds ratio is 1). The odds ratios of first grade males in the top quartile of aggressive behavior in first grade who were in higher aggressive classrooms ranged from...
### Table 5. Effect of first grade girls aggressive behavior and first grade classroom poverty on the risk of being highly aggressive in middle school (control classrooms only)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Log Odds Ratio</th>
<th>SE</th>
<th>Sig</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>First grade aggression</td>
<td>.56</td>
<td>.27</td>
<td>.04</td>
<td>1.75</td>
<td>1.03–2.97</td>
</tr>
<tr>
<td>First grade classroom poverty</td>
<td>2.38</td>
<td>1.06</td>
<td>.024</td>
<td>10.83</td>
<td>1.36–86.15</td>
</tr>
</tbody>
</table>

*Note:* Number of control girls used in this analysis was *n* = 201.

### Table 6. Effect of first grade boys aggressive behavior, first grade classroom aggression, first grade classroom poverty, and preventive intervention status on risk of being highly aggressive in middle school

<table>
<thead>
<tr>
<th>Variable</th>
<th>Log Odds Ratio</th>
<th>SE</th>
<th>Sig</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>First grade aggression</td>
<td>.26</td>
<td>.22</td>
<td>.23</td>
<td>1.29</td>
<td>0.85–1.98</td>
</tr>
<tr>
<td>Preventive intervention</td>
<td>−.69</td>
<td>1.20</td>
<td>.56</td>
<td>.50</td>
<td>0.05–4.98</td>
</tr>
<tr>
<td>Classroom aggression by first grade aggression by preventive intervention</td>
<td>−2.69</td>
<td>1.09</td>
<td>.01</td>
<td>.07</td>
<td>0.01–58</td>
</tr>
<tr>
<td>Classroom aggression by first grade aggression by preventive intervention</td>
<td>.21</td>
<td>.57</td>
<td>.72</td>
<td>1.23</td>
<td>0.40–3.78</td>
</tr>
<tr>
<td>Classroom aggression by preventive intervention</td>
<td>.84</td>
<td>.38</td>
<td>.03</td>
<td>2.31</td>
<td>1.10–4.87</td>
</tr>
<tr>
<td>Three-way interaction</td>
<td>−.71</td>
<td>1.81</td>
<td>.19</td>
<td>11.06</td>
<td>0.32–387.63</td>
</tr>
<tr>
<td>First grade classroom poverty</td>
<td>1.21</td>
<td>.35</td>
<td>&lt;.01</td>
<td>3.35</td>
<td>1.69–6.66</td>
</tr>
</tbody>
</table>

*Note:* Number of control and GBG intervention boys used in this analysis was *n* = 278.

### Table 7. Effect of first grade boys’ aggressive behavior, first grade classroom aggression, and first grade classroom poverty on risk of being highly aggressive in middle school in GBG group

<table>
<thead>
<tr>
<th>Variable</th>
<th>Log Odds Ratio</th>
<th>SE</th>
<th>Sig</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>First grade aggression</td>
<td>.52</td>
<td>.55</td>
<td>.34</td>
<td>1.69</td>
<td>0.58–4.94</td>
</tr>
<tr>
<td>First grade classroom aggression</td>
<td>−.38</td>
<td>1.49</td>
<td>.80</td>
<td>.69</td>
<td>0.04–12.70</td>
</tr>
<tr>
<td>Classroom aggression by first grade aggression</td>
<td>.31</td>
<td>.61</td>
<td>.83</td>
<td>1.14</td>
<td>0.34–3.76</td>
</tr>
<tr>
<td>First grade classroom poverty</td>
<td>1.58</td>
<td>.70</td>
<td>.02</td>
<td>4.87</td>
<td>1.24–19.12</td>
</tr>
</tbody>
</table>

*Note:* Number of GBG intervention boys used in this analysis was *n* = 76.
Figure 4. The effect of lower versus higher aggressive first grade control classrooms on the risk of males being highly aggressive by middle school. The four quartile ranges are 1.00–1.13, 1.13–1.80, 1.80–2.60, and 2.60–6.00.

1.7 to 58.7. The odds ratios for top quartile males in lower aggressive classrooms ranged from 1.1 to 2.7.

Until this point in the analyses we have been comparing the course of aggressive behavior among more aggressive first graders to the median children in higher aggressive and lower aggressive first grade classrooms. To understand better the interaction between individual aggressive behavior and classroom aggressive levels, we compared the risk of being highly aggressive in middle school among the more severely aggressive first grade children in highly aggressive first grade classrooms to those in lower aggressive classrooms. We evaluated the odds ratio of being highly aggressive 6 years later in middle school for two groups: the high aggressive first grade males (above 1 SD in first grade) who had been in higher aggressive first grade classrooms to similarly high aggressive males who had been in lower aggressive first grade classrooms. This comparison produced an odds ratio of 2.57, indicating that the context of high aggression had a substantial long term effect on early aggressive children.

At the left end of the plot, we can compare the effects of lower and higher classroom aggression on low aggressive children. These odds ratios for low aggressive children in high aggressive classrooms fall below 1, indicating that boys in higher aggressive classrooms who are themselves not aggressive in first grade actually have a lower risk of being aggressive in middle school than their counterparts in lower aggressive first grade classrooms. There are fewer such boys in higher aggressive first grade classrooms than in lower aggressive classrooms, but they seem to be resisters to the aggressive classroom environment.

The best fitting model described above in Table 4 indicates that school/classroom level of poverty acts differently than individual poverty. In multiple logistic regression analysis, classroom poverty in first grade significantly predicted aggressiveness 6 years later, yet individual poverty status did not. Also school/classroom level poverty did not interact with classroom level of aggression but was directly related to later aggressive behavior in middle school regardless of first grade baseline ratings of aggressive behavior. We also found that the school/classroom poverty
Aggression in first grade

The effect was independent of the individual and classroom aggression interactive effect. We then examined a sequence of models to explain why the contextual poverty measure remained significant but individual poverty status did not. The effect of individual poverty is primarily explained through an indirect effect on aggressive behavior. First, we performed a $t$ test that revealed a significant increase in aggressive behavior ratings among the first grade children receiving free lunch compared to those not on free lunch, $t = 2.07$, $df = 294$, $p < .05$. Thus, individual poverty added to the number of aggressive first graders, who in turn are at increased risk of later aggression if they were in higher aggressive first grade classrooms. Secondly, the effect of poverty was significant in a model which excluded individual aggression. Thus, aggressive behavior mediates some of the individual poverty effect yet classroom (and school) poverty still remains important.

Results for boys. The two-way interaction in Table 6 (control and intervention classrooms) remains as in Table 4 (control classrooms only) due to the way we coded the variables, as described earlier. However, the three-way interaction in this analysis represents the change in the strength of interaction introduced by the intervention. This finding reveals a trend in the expected direction. The GBG tends to attenuate the interaction between classroom aggression and first grade individual aggression as indicated by a negative log odds ratio ($-0.71$). However, the three way interaction is not significant (confidence interval of $1.03 \pm 2.97$). Among girls, only school/classroom poverty and first grade individual aggressive behavior were significant predictors of being highly aggressive in middle school. The odds ratio confidence interval for first grade classroom/school poverty was significant but had a large confidence interval of $1.36 \pm 86.15$ (see Table 5).

Results for girls. Only 18 girls were classified as highly aggressive among 201 girls in the analysis, making any inferences exploratory. For girls, the risk of being highly aggressive in middle school was not enhanced by high levels of first grade classroom aggressive behavior. Individual level of aggression in first grade was a significant antecedent by itself (odds ratio confidence interval of $1.03 \sim 2.97$). Among girls, only school/classroom poverty and first grade individual aggressive behavior were significant predictors of being highly aggressive in middle school. The odds ratio confidence interval for first grade classroom/school poverty was significant but had a large confidence interval of $1.36 \sim 86.15$ (see Table 5).

The effect of the GBG aimed at the social adaptational process in the first grade classroom regarding aggressive, disruptive behavior

We hypothesized that the preventive intervention (GBG) aimed at classroom aggression would reduce the effect of high classroom aggression on high aggressive first grade children compared to similar children in control classrooms. The population consisted of the children who had been in GBG classrooms in first grade compared to the control classroom children. We added the intervention condition to the best fitting model previously found for controls for each gender, including its two-way interaction with both individual first grade aggressive behavior and level of classroom aggression, as well as the corresponding three-way interaction among intervention, individual level, and classroom level of aggression. If the intervention worked as predicted, we should find a significant three-way interaction. That is, the GBG should reduce the size of the interaction between individual level and contextual aggression. The result is shown in Table 6.

Results for boys. The two-way interaction in Table 6 (control and intervention classrooms) remains as in Table 4 (control classrooms only) due to the way we coded the variables, as described earlier. However, the three-way interaction in this analysis represents the change in the strength of interaction introduced by the intervention. This finding reveals a trend in the expected direction. The GBG tends to attenuate the interaction between classroom aggression and first grade individual aggression as indicated by a negative log odds ratio ($-0.71$). However, the three way interaction is not significant (confidence interval of $0.12 \sim 1.97$). The relatively wide confidence interval is indicative of the moderate to low statistical power for testing the three-way interaction.

Another way to examine the multidimensional interaction is to fit the model separately for the two intervention conditions. We hypothesized that in this analysis the GBG effect should reduce the magnitude of the odds ratio between individual and classroom aggression towards the null value of 1 in the GBG group. We found evidence to support this hypothesis. As shown in Table 7 the analysis of GBG for boys alone (without the control group) revealed a confidence interval range for the interaction odds ratio from 0.34 to 3.76, a null finding as we would predict. The positive log odds ratio of .31 indicates a slight increase in middle school aggression among aggressive boys in high aggressive, disruptive classrooms.
Figure 5. The effect of lower versus higher aggressive first grade GBG classrooms on the risk of males being highly aggressive by middle school. The four quartile ranges are 1.00–1.13, 1.30–2.00, 2.00–3.40, and 3.40–6.00.

compared to low aggressive, disruptive classrooms. However, the statistical power in this analysis is again relatively low, as indicated by the relatively wide confidence interval.

For comparison purposes, we also calculated the odds ratio as we did for control boys using the above model. Figure 5 shows the results. By comparing this figure with that for control boys, it is apparent that in the GBG classrooms the classroom level of aggression effect seems markedly lower than in the control classrooms. This suggests that the GBG reduced the moderating effect of classroom context. However, this result should not be taken as conclusive evidence given the low power of the analysis. We conclude that there is some suggestive evidence that the GBG reduced the impact of the level of classroom aggression on the risk for aggressive boys in higher aggressive classrooms, though uncertainty remains in this inference.

We also searched for the effect of the GBG interacting with first grade level of classroom/school poverty and individual poverty on the risk of later aggressive behavior. The results indicated that effect of classroom poverty is independent of intervention design, indicating that classroom poverty had the same effect on boy’s risk of being highly aggressive in the GBG classrooms just as it had in control classrooms. We did not detect any effects for individual poverty.

Findings for girls. The GBG did not alter the course of aggressive behavior for girls. Classroom/school poverty continued to increase the risk in GBG classrooms just as it had in the control classrooms.

Discussion

The four hypotheses tested in this paper were as follows. First, we tested and confirmed that first grade classroom levels of aggressive behavior enhanced the risk of males being highly aggressive from first grade through the transition into middle school. Tests of the next hypothesis confirmed that first grade males who were themselves higher aggressive behaving were particularly susceptible to a higher aggressive classroom environment. Tests of the third hypothesis confirmed that neither individual poverty nor the level of
classroom poverty, as marked by free lunch, would explain these effects. Although not predicted, we found separate effects for classroom poverty level and the individual child’s poverty in predicting highly aggressive behavior in middle school. Last, we tested the hypothesis that the preventive intervention directed at the classroom management around aggressive behavior would mainly operate in the high aggressive classrooms, where classroom management was presumably less adequate. The results were in the predicted direction, but point to the important need for further testing in the next generation of preventive intervention trials.

Life course/social field theory is built on the central idea that human development, whether normal or pathological, can best be understood by studying the ecological context in which it occurs. Whether development follows a normal or pathological trajectory depends on the adaptive capacity of the individual to respond adequately to the social task demands of the main social fields relevant to each stage of life. The theory postulates that teachers and classmates, the child’s natural raters, play critical roles in the context of the first grade classroom in judging and reinforcing adaptive or maladaptive behavioral responses, on one hand to the teacher’s social task demands, and on the other to the classmates social task demands. In the study reported here, first grade children rated by their teacher as aggressive and disruptive, who were in a classroom where the predominant environment was aggressive, had a higher risk of being severely aggressive, disruptive in middle school, compared to less aggressive children in highly aggressive classrooms, or children just as highly aggressive but in lower aggressive classrooms. There was a strong and clear child by classroom interaction.

The environment of the first grade classroom, as well as family poverty, and classroom/school poverty, all appear to influence the developmental trajectory of the children. Classroom aggression levels appear to effect aggressive boys but not girls, while classroom/school poverty affects all children. The variation in aggressive behavior and its impact was primarily at the classroom level, and less so at the level of the school. Despite children being randomly assigned to classrooms at the beginning of first grade, classroom differences in levels of aggressive behavior emerged as early as the first quarter of first grade, suggesting that the very origins of variation in classroom aggressive levels came from the classroom teacher and/or the mix of students and the teacher. The results for poverty, in contrast, stemmed from beyond the classroom, from the family in the case of the child’s free lunch status or the school and community in the case of prevalence of classroom/school free lunch. Poverty at the classroom and school levels reflects the community area served by the school. The explanations of its link to middle school aggressive behavior transcend gender and baseline levels of first grade classroom and individual levels of aggressive behavior and individual poverty. Such mediators and moderators as community and/or school exposure to violence and generally low resources in school materials and personnel may be playing roles. The lesson is that contextual influences on development may not be one dimensional but rather can operate independently or interactively with each other. Further research must uncover mechanisms to direct preventive programs at each specific influence.

Our chosen definition of aggressive behavior in middle school places the cut-point at beyond one standard deviation above the mean. The overall prevalence rate of over 14%, with males twice the rate of females, is in keeping with many studies of predictors from earlier years to problems in adolescence that we cited in the introduction. It also was within the levels found to be associated with risk of conduct disorder in analyses previously reported (Kellam et al., 1994). This cut-point appears to have meaningful relationships to classroom contextual influences. Further work is required to determine whether other cut-points reveal different results. It is important to note here, as a prelude to such further studies, that linear models of aggressive behavior ratings did not reveal the classroom contextual influences reported as much as models using this categorical outcome. This suggests the hypothesis that severe ag-
gressive behavior in middle school may best be viewed as a category rather than a continuum along a dimension of severity of disorder. Developmental epidemiological studies of categorical compared to dimensional relationships of antecedents, mediators, and moderators to pathological outcomes such as conduct disorder can help elucidate the categorical or dimensional nature of specific disorders.

Our research findings are limited in the following additional ways. First, the design which achieved balance in child assignment to classroom (sequential assignment backed up by kindergarten performance) has implications for statistical power for detecting interactions. Even though such balance is required to examine effects of classroom context on individual trajectories, balance reduces variation in levels of classroom aggression thereby diminishing power for testing high-level interactions. A second limitation in measurement is the use of the single item of free lunch status to define poverty. While free lunch is a federally defined and locally adjudicated status, it does not represent the entire breadth of poverty. In addition, the single dichotomy we used at the individual level may have more measurement error compared to the classroom contextual measure of poverty based on averaging this item. It could be that this difference in measurement error could explain why classroom poverty was predictive, while individual poverty only predicted first grade aggressive behavior. Finally, our analyses are based on logistic regressions which did not formally take account of the multilevel data structure of classrooms and schools. Such programs are just now beginning to be used in prevention studies (D. Hedeker, personal communication, 1997) and will be carried out in further analyses.

We suggest the following hypothetical model to better understand the classroom effect on the more aggressive males: The skills of the teachers in highly aggressive, disruptive classrooms were not sufficient to promote an integrative prosocial classroom social system. Effective classroom behavior management appears to be essential in the socialization of young children, and for boys whose initial behavioral response is aggressive, disruptive, the lack of providing teachers sufficient background training is critical. Teacher training typically does not provide effective methods and experience in classroom behavior management. This, coupled with the lack of staff support for the classroom, places such children at great risk of later conduct disorder and related academic problems. This inference should not be seen as a “blame the teacher” conclusion. The control teachers who participated in this prevention program were dedicated and fully committed, but many did not have these resources to succeed.

Boys from poverty families may be particularly vulnerable to poorly managed classrooms, as indicated by their increased risk of being aggressive in first grade and, in the absence of first grade aggressive behavior in the model, the relationship we found to aggressive behavior in middle school. When we added first grade aggressive behavior to the model along with free lunch, however, the link between first grade free lunch and middle school aggressive behavior disappeared. Therefore, we inferred that the link between individual poverty and later aggression was mediated through early aggressive behavior. Teacher’s skills at classroom management were then critical to the children’s socialization, particularly in the face of family poverty.

Teachers who participated in this study were not from a specially selected sample but were all first grade teachers in the participating schools. The policy implications are that teacher’s colleges and in-service training need to include specific training in classroom behavior management as an important part of the socialization role of the classroom.

The child’s maladaptive aggressive behavioral response to the teacher’s demand to sit still, pay attention, and learn may depend on family processes that precede and parallel the classroom social adaptational process including the likelihood of coercive family interaction as described by Patterson et al. (1992). When a child is in a classroom with aggressive, disruptive classmates, the others are likely to reinforce this maladaptive behavioral response (Dishion et al., 1996), which then escalates to a higher risk of severe aggressive,
aggressive, disruptive behavior leading to high levels of conduct problems and high risk of drop out from school, as Ensminger and Slusarcick report (1992).

The classroom data studied here were based on first grade assessments, yet the findings persist through the transition into middle school. A hypothetical explanatory model, one that might guide the next stages of developmental epidemiological and preventive trial research, is that the experience of the aggressive child in aggressive first grade classrooms sets the pattern of the child’s behavioral responses, poor achievement, as well as membership in poor behaving peer groups and lack of attachment to school. While children were randomly assigned at the beginning of first grade, after the second grade they were allowed to be assigned where the principal wished. In subsequent years into middle school the aggressive children were quite possibly placed in poor performing, bad behaving classrooms.

This research on classroom context has major implications for school policies. The social policy of tracking and ability grouping (i.e., assigning children to homogeneous classrooms with similar characteristics in achievement and behavior) has been documented to result in creating many classrooms with a prevailing aggressive, disruptive environment. The policy is widespread, particularly in impoverished school districts (Kellam & Ensminger, 1980; Werthamer–Larsson et al., 1991). The reasons often provided for the implementation of this policy are that homogeneous classrooms are easier to teach, require fewer reading groups, especially where teachers have few resources and large classes. The decision to track is usually based on standardized readiness test scores, kindergarten teachers evaluations, and sometimes far less evidence-based criteria (Grant, 1991; Werthamer–Larsson et al., 1991). Placing many aggressive male children together in one classroom may lead to very serious aggressive behavior later amounting to socializing children directly toward anti-social outcomes.

Our discussion thus far has only concerned the control classrooms. The experimental preventive intervention classrooms provide an opportunity to test the hypothesis regarding the failure of the social adaptational process for high aggressive children in the high aggressive classrooms. Without taking classroom differences into account, we have previously reported data supporting the inference that the GBG had a significant effect reducing aggressive, disruptive behavior by the end of first grade and at the transition into middle school (Kellam et al., 1994). In this paper we divided the intervention classrooms into higher and lower aggressive classrooms based on teacher ratings at the time of first report card. We found evidence suggesting that the aggressive classroom effect was reduced over the course of first grade through transition into middle school. Statistical power was limited, but it appears that the intervention effect we reported in earlier papers may indeed lie in the higher aggressive classrooms. The suggestive intervention findings reported in this paper are consistent with the hypothesis that applying more precise classroom behavior management methods can reduce the impact of aggressive classrooms on the developmental course of aggressive behavior. The GBG was directed at the classroom socialization of behavior; the results suggest that the classroom is not only a vitally important socialization context, but that it may be malleable, thereby justifying optimism that providing teachers an effective method of classroom behavior management is worthwhile in the prevention of severe aggressive behavior over the course of development.

The classmates’ nominations of aggression were generally closely attuned to teacher ratings. Males in the control classrooms were viewed similarly by peers and by the teacher on the items of aggressive behavior involving authority acceptance such as Gets Into Trouble. Items having to do with interpersonal processes among classmates such as Acts Mean and Gets Into Fights, showed somewhat lower levels of agreement but were still correlated above .50. In general, the social system of the classroom and the classmates/peer group appeared to be highly integrated with the broad shared perspective by both peers and teachers as to who was aggressive, disruptive. The difference between higher and lower aggressive
classrooms was not in the lack of agreement between classmates and teacher as to who misbehaved, but rather in the behaviors themselves.

The implications of these findings are that the first grade classroom has a critical impact on the developmental course of aggressive behavior for the boys whose initial responses to classroom are aggressive, disruptive. Based on these results, the classroom context takes on an increasingly important salience for studies of the nature and etiology of disorders, prevention research, and policies regarding socialization and schooling.

References


Adolescence in context: The interplay of family, school, peers and work in adjustment (pp. 390–408). New York: Springer–Verlag.


