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ABSTRACT

Although school violence is an important topic to the U.S. public, little research has examined issues of violence and bad behavior in schools, particularly among early adolescents. To fill this need, research on the transition from elementary to middle grades, to include the domain of violence, is covered in this paper. Three aspects of violence are defined: victimization at school, getting into trouble for bad behavior at school, and perceptions of school as having serious problems. Special emphasis was placed on studying predictors of violence during early adolescence. Drawing on data from a national educational longitudinal study, it was found that students reported being victimized and perceived their school as having serious problems more often in school when the transitions from elementary to the current eighth-grade school occurred during early adolescence. Students who made the transition into their current eighth-grade school during grades 3, 4, or 5 were less likely to report being victimized and were less likely to report perceiving their schools as dangerous or as having problems when compared to other students. It is thought that schools with certain grade structures tend to engage in practices that are incompatible with the developmental needs of early adolescents. Contains approximately 70 references. (RJM)

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School Violence During Early Adolescence

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Abstract

In this article, we expand research on the transition from elementary to middle grades schools to the domain of violence. We operationally define three aspects of violence: victimization at school, getting into trouble for bad behaviors at school, and perceptions of school as having serious problems. Using hierarchical linear modeling techniques, we determined that during the eighth grade, students reported being victimized and perceiving their school as having serious problems more often in school when the transition from elementary to the current eighth grade school occurred during early adolescence. We also found that students who made this transition at the ninth grade or later were less likely to get into trouble for bad behavior at school than other students. We discuss the implications of these findings for psychological and social development during early adolescence.

School Violence During Early Adolescence

While violence in schools is an extremely important topic to the American public and is on the rise (Elam & Rose, 1995), surprising little research to date has examined issues of violence and bad behavior in schools, particularly among early adolescent populations. For example, there was only one reference during 1995 and one reference during 1996 to research on violence in the Annual Meeting Programs for the American Educational Research Association (AERA, 1995, 1996), despite the fact that results of a recent Phi Delta Kappa/Gallup Poll indicate that violence, poor discipline, fighting, and gangs are the public's biggest concerns about schools in the US (Miller, 1994).

The development of violent behavior during early adolescence has been attributed to a number of factors, including physical and psychological victimization by school bullies (Batsche & Knoff, 1994; Hoover, Oliver, Thomson, 1993; Hazler, Hoover, & Oliver, 1991; 1992; Sharp, 1995), effects of violence in the media (Molitor & Hirsch, 1994; Paik & Comstock, 1994; Tulloch, 1995) and societal factors such as the disintegration of the family, alcohol and drug abuse, easy access to weapons, and poverty (Avery, 1978; Frost, 1986). Ecological perspectives on human development (e.g., Bronfenbrenner, 1979) suggest that contextual and societal circumstances need to be separated from variables representing individual differences in order successfully to disentangle and interpret various social influences on development. We adopt this perspective in the current study, by examining the separate individual and organizational effects on violence in schools during early adolescence.

A Focus on the School During Early Adolescence

Research on violence strongly has focused on the media, the community, and the family as causal agents. Nevertheless, it may be that the individual students, their families, and communities are not the only sources of the problem. The school largely has been ignored in studies examining violence and bad behavior during adolescence.

Violence in the Schools. Almost half of the youth charged with serious offenses are under 15 years of age, and 75% are boys (Walker & Sylvester, 1991). Violence, however, is not limited to the streets. Indeed, as violence increases on the streets and in the community, it also increases in the schools, in both urban and rural communities (Goldstein, Harrootunian, & Conoley, 1994; Nelson & Shores, 1994; Shores, 1995).

There is reason to believe that violence in school buildings is increasing. Stephens (1994) gives a staggering figure of 3,000,000 thefts and violent crimes per year (i.e., 16,000 incidents per school day, or one every 6 seconds a child is in the school). Boothe, Bradley, Flick, Keough & Kirk (1994) report that the majority of middle and elementary school principals in the United States have noted an increase in violence in males and females. The public also believes that violence is increasing in American schools (Elam & Rose, 1995). However, other researchers caution that statistics concerning violence in schools must be interpreted with extreme caution, since researchers have operationalized and measured violence using many different methodologies and criteria (Furlong & Morrison, 1994).

Variables Contributing to Violence During Early Adolescence

Ethnicity and Socioeconomic Status. Issues of violence and behavioral problems are prominent in minority communities (Fox & Pierce, 1994). This problem is likely to increase in the near future. For example, by the year 2005, the number of teenagers aged 15-19 is likely to increase by 23%. African American teens alone will increase by an estimated 28%, and the Latino American adolescent population is estimated to increase by 47% (Fox & Pierce, 1994). Accordingly, schools with high percentages of African American students tend to express greater needs for violence prevention programs (Fontenot, 1993; Howerton & Enger, 1994).

In addition, the number of children living in poverty in the US is likely to increase through at least the year 2020 (Pallas, Natriello, & McDill, 1989). Researchers document that socioeconomically disadvantaged early adolescents face more socio-emotional and academic problems than adolescents from more advantaged backgrounds (Felner et al., 1995). Thus any relations among ethnicity, socioeconomic status, and violence are likely to remain important social issues in the foreseeable future.

Research suggests that once socioeconomic factors have been accounted for, the relation between ethnicity and delinquent behaviors is very small (Henggeler, 1989). Violent acts committed in school buildings by minority students and lower class students often can be attributed to different cultural norms, and a lack of understanding of certain aspects of minority culture, by non minorities. Once the economic, psychological, and social contexts of minority groups are understood, appropriate violence prevention

programs that are sensitive to cultural diversity may be developed (Soriano, Soriano, & Jimenez, 1994).

Alcohol and Drug Abuse. Brendtro & Long (1995) indicate that a recent report to Congress tied alcoholism to 49% of murders and 52% of rapes in the United States. These authors add that "by 9th grade, 90% of young people have tried alcohol, and a third of the 12th graders are binge drinkers" (p.55). Other research indicates that when students feel that drugs are available at school, they are almost twice as likely to report fears of being attacked in school (Bastian & Taylor, 1991). Such statistics have led researchers on violence to conclude that issues such as alcohol and drug use during adolescence are important variables in understanding the roots of violence and behavioral problems during early adolescence (Boothe et al., 1994).

Perceptions of Safety and Danger in the School. Despite calls for safe environments conducive to learning, many schools continue to be dangerous environments (Armstrong, 1994; Boothe et al., 1994). Students' perceptions of safety and danger in their schools are strongly tied to how the adolescent will cope with the academic environment (Dryfoos, 1990). Indeed, students must cope with an array of safety issues during the school day, including interactions with bullies (Sharp, 1995; Slee, 1995a), instances of sexual harassment (Lee, Croninger, Linn, & Chen, 1996; Stein, 1995), and numerous other behavior-related problems.

Perceptions of danger in the school may lead to anxiety, a decrease in motivation, and ultimately to even more violence. Therefore, it is often argued that schools need to alleviate anxiety and panic, and help students look upon school as safe and positive place

(Friedlander, 1993). Indeed, when students witness or experience violent acts in school, they are likely to develop school-related fears. For example, in one study (Bastian & Taylor, 1991), it was found that having been victimized was associated with apprehension about being victimized or attacked again in the future in school.

Psychological Consequences of Violence and Victimization.

According to a variety of sources (e.g., the American Psychological Association, 1993; Dennis, 1994; Sharp, 1995; Singer, Anglin, Song & Lunghofer, 1995), the post-traumatic stress that children and adolescents experience as either victims of or witnesses to violence has a long-lasting developmental impact. Consequences of violence and victimization may include intrusive imagery, emotional constrictiveness or avoidance, fears of recurrence, sleep difficulties, disinterest in significant activities, depression, and attention difficulties (American Psychological Association, 1993; Slee, 1995b). Such psychological ramifications of violence may have both short and long term effects on students' motivation, achievement, and health.

The Middle School Transition and Violence

Developmental researchers suggest that the transition from elementary to middle school during early adolescence is often associated with negative changes in achievement, attitudes, and motivation (e.g., Eccles & Midgley, 1989; Eccles et al., 1993; Midgley, Anderman, & Hicks, 1995; Simmons & Blyth, 1987). Nevertheless, studies to date have not examined relations between the middle school transition and violence.

Many of the negative shifts associated with this transition have been attributed to the environments of typical middle schools -- middle school environments often stress competition, individualized work, unengaging and uninteresting academic tasks, and contentious relationships with adults (Anderman & Maehr, 1994; Eccles & Midgley, 1989). The middle school transition occurs at a period of psycho-social development when adolescents want to acquire a sense of autonomy, to become task-involved, to learn cooperative skills, and to develop meaningful relationships with strong adult role models. Eccles and Midgley refer to this as a problem of stage-environment fit, or a "developmental mismatch" -- adolescents' psychological needs are not being met by the environment provided by the typical middle grade school (Eccles et al., 1993).

Some research suggests that K-8 schools are more likely to engage in policies and practices that are in line with the developmental needs of early adolescents than are more typical "middle" schools (Simmons & Blyth, 1987). It is not specifically that there is something magical about the age of the transition; rather, the timing of the transition is less important than the type of environment that the students move into (Maehr, Midgley, & Collaborators, 1996). When students attend schools during early adolescence that endorse policies and practices that are in line with early adolescents' developmental needs, then adolescents are less likely to experience negative shifts in motivation and achievement (Eccles & Midgley, 1989).

Other School-Level Characteristics Related to Violence

Violence in schools often is associated with a host of other school-level variables. For example, violence has been associated with drug possession, vandalism, class size,

proportions of minority and bilingual students in schools, and attendance rates (Furlong & Morrison, 1994; Gorski & Pilotto, 1993; Soriano et al., 1994). Since school violence has been attributed to many complex psychological, biological, and social variables, we have included a number of these variables in the present study in order to control for their effects. The additional school-level variables used as controls in this study include class enrollment size, percentage of minority faculty, percentage of bilingual students, attendance rates, teacher-student ratios, teacher salary levels, and an index of the extent that drugs and alcohol are problematic in the school. These variables were included because they have been identified as being related to school violence. However, the goal of the present study is to examine the relations between school transitions and aspects of violence; while these other variables were included as controls since they have been identified as being related to school violence (e.g., Soriano et al., 1994), they are not the primary variables of interest in the present study.

Hypotheses of the Present Study

In this study, we use data from the base year of the National Education Longitudinal Study (NELS; National Center for Education Statistics, 1994) to examine the relations between school organizational characteristics and various aspects of school violence, after controlling for characteristics of individual students. Since research has identified the middle school transition as a particularly crucial period in the psychological and social development of youth, and since research also indicates that violence is a growing problem in schools, we believe that some schools will be more conducive to violence than others. Specifically, we hypothesize that when students do not make a

transition until grade nine or later, they will experience lower levels of victimization, will be less likely to get into trouble for bad behavior, and will perceive their schools as being less dangerous and having less serious problems during the eighth grade. We make this hypothesis because schools with a K-8 or K-12 configuration often engage in practices which are more developmentally appropriate for early adolescents than schools in which students make a transition during early adolescence (e.g., 6-8 or 7-9 schools -- see Simmons & Blyth, 1987). In addition, we examine the effects of several school-level variables on these outcomes. These school-level variables represent characteristics of schools including urbanicity, class size, percentage of minority teachers, percentage of bilingual students, attendance rates, teacher-student ratio, teacher salary level, whether or not drugs and alcohol are a problem in the school, and whether or not the school is public, private, or parochial. We use hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) to examine these organizational effects.

Method

Sample

The data used in the present study come from the base year of the National Education Longitudinal Study (NCES, 1994). NELS is a longitudinal study sponsored by the US Department of Education Office of Educational Research and Improvement. NELS was funded to examine the achievement, progress, and development of eighth graders. Some of the original sample were followed for up to six additional years. Data were collected from students, their parents, teachers, and school administrators. In the

present study, we utilize student level data, as well as school-level data that has been reported by administrators. All data used in this study were collected during the first year of data collection. We have incorporated NELS weighting variables; therefore, the data are generalizable to the United States population of early adolescents.

The full sample includes data for 24,599 students, from 1035 schools. All students were in the eighth grade during the base year of NELS; however, 22.7% attended either P, K, or 1-8 schools or P, K, or 1-12 schools; 58.6% of the students were in schools with grade configurations of either 6 - 8, 7 - 8, 7 - 9, or 8 - 9; 5.7% of the students were in 3, 4, or 5 - 8 schools; and 9.6% were in 6, 7, or 8 - 12 schools.[1] Thirty-one percent of the students attended urban schools, 41.7% attended suburban schools, and 27.4% attended rural schools; finally, 78.8% of the students attended public schools, 10.6% attended Catholic schools, and 10.5% attended other types of private schools. The sample is evenly divided by gender (49.2 % male, 49.8% female). In terms of ethnicity, 12.9% of the sample is Hispanic/Latino American, 12.2% is African American, 6.2% is Asian/Pacific Islander, 63.8% is Caucasian, and 3.8% is Native American.

Construction of Student Level Dependent Variables

We created the student and school level scales using factor analysis. We used a varimax rotation in the analyses. The resulting scales were created from the items that loaded the most strongly on each factor. After factor analyzing the data, we checked internal consistencies on all measures using Cronbach's alpha. Items, anchors, and reliability coefficients for student-level variables are presented in Appendix I.

[1] Numbers do not always add to 100% due to missing data. Any students with missing data at the school level were eliminated from the analyses.

It is particularly difficult to operationalize "violence" in empirical research (Furlong & Morrison, 1994). While most Americans would agree that there is indeed much violence in their country, few researchers agree on how to operationally define violence. For the present study, we developed three measures that tap into differing aspects of violence -- getting into trouble for bad behaviors at school, being victimized at school, and perceiving the school environment as being dangerous and problematic.

Getting into trouble for bad behavior. We developed a measure of students' self-reported behavioral problems in school. The measure assesses how much the students got into trouble at school, and how often parents were warned about behavioral problems. The scale displayed good internal consistency (Alpha = .76).

Perceives school as having problems. We created a measure of how much students perceive their schools as having unsafe (dangerous) environments and other problems such as attendance problems. Participants indicated how much of a problem each of eleven events were in their schools. These events included several items that referred to issues such as student attendance and absenteeism. All eleven items loaded on to a single factor. The scale represents the mean response for these 11 items, and displays good internal consistency (Alpha = .90).

Victimization. We developed a measure of self-reported victimization at school. This composite asks students to answer questions regarding whether or not they have had something stolen at school, whether or not somebody offered to sell them drugs at school, or whether or not somebody threatened to hurt them at school (see Appendix I). The scale displayed good internal consistency (Alpha = .93).

Construction of Student Level Predictor Variables

A variety of factors can be chosen as predictors in studies examining violence during adolescence. The student-level variables chosen as predictors in the present study represent the major demographic and psychological characteristics that have been identified by prior research as being important in both studies of violence and studies of transition to middle school (e.g., Anderman & Maehr, 1994; Eccles et al., 1993; Eccles & Midgley, 1989; Furlong & Morrison, 1994; Simmons & Blyth, 1987; Straus, 1994).

Gender. We used a dummy variable to represent gender, where 0 = male and 1 = female.

Ethnicity. We also created dummy variables to represent various ethnic backgrounds, where 0 = not a member of the group, and 1 = member of the group. For the present study, the groups include African Americans, Latino/Hispanic Americans, European Americans, and Asian American/Pacific Islanders. The comparison group was Native Americans.

Popularity. We developed a measure of students' self-perceptions of popularity, since feelings of popularity are particularly influential during early adolescence (Parker & Asher, 1993; Wentzel & Asher, 1995). We first factor analyzed five items. Three of the items loaded on a factor representing popularity; the other two items referred to whether or not the student was perceived by others as a good student or as a troublemaker, and these two items were not used. The final measure consists of the mean of three items (see Appendix I). The Cronbach's alpha was .65.

Locus of control. We used the composite NELS locus of control measure, which was designed so that individual items would match data collected in the High School and Beyond study (see NCES, 1994, Appendix H). The measure consists of six items (see Appendix 1). The Cronbach's alpha was .68.

Television viewing. We included a measure of self-reported television viewing, since a variety of studies suggest that viewing violent programming on television may be related to violent behavior (e.g., Comstock 1986). However, no items specifically measured the viewing of violent programming. Consequently, the measure of television viewing represents viewing all types of television programming. Students responded to two items asking them to estimate the amount of time they spend watching television on weekdays and on weekends. Scores represent the sum of responses to these two items.

Achievement. We computed an academic achievement variable based on students' standardized scores on tests of English, mathematics, social studies, and science taken by all NELS student participants (see NCES, 1988, for detailed descriptions of these tests). The four test measures loaded on one factor, and formed a scale with excellent internal consistency (Alpha = .95).

Teacher disinterest. Students' assessments of how interested teachers were in students' academic performance and effort during the eighth grade were assessed using the mean of five items which loaded on to one latent factor. The composite had good internal consistency (Alpha = .78). Most of the items are worded in a positive manner (e.g., "Most teachers listen to what I say"), but we used a scale where 1 = strongly agree,

... 4 = strongly disagree. Consequently, high scores on this scale indicate that the student feels that the teachers are not concerned with students, or are disinterested in students.

Ability grouping. We developed a measure indicative of the number of classes in which students were ability grouped. Respondents were asked to indicate whether or not they were ability grouped for mathematics, science, social studies, and English (see Appendix I). The score represented the sum of the number of classes in which students were ability grouped. If students indicated that they did not know whether or not they were ability grouped for a particular subject, they were included in the "not ability grouped" category.

Plans after high school. This measure was the students' response to a single item which asked students to estimate their current plans for future education (see Appendix I).

Socioeconomic Status (SES). We used the standardized NELS SES measure in the present study. This measure was a composite consisting of mother's and father's education, mother's and father's occupation, and family income (see NCES, 1994, Appendix H, for detailed description of this composite).

Absenteeism. A single item measured absenteeism. Students were asked to indicate how many days of school they missed over the past four school weeks.

Construction of School-Level Predictor Variables

In the HLM analyses reported in this paper, we incorporated several school-level variables, which represented demographic characteristics of the schools. These variables were computed from the questionnaire completed by an administrator at each middle

school, except where noted otherwise. Items, anchors, and reliability coefficients for the school-level variables are presented in Appendix II.

Transition variables. We developed three dummy-coded transition variables which represented the grade structure of the school that the respondent was in during the eighth grade. The first variable represented whether or not the student made a transition into the current eighth grade school before the ninth grade. Students with a value of "1" on this variable attended either K-8 or K-12 schools, and thus were in the same school until at least the beginning of the ninth grade.[2] The second transition variable represented whether or not the student made a transition to the current eighth grade school during the sixth or seventh grades (prior to the eighth grade, when NELS was first administered). Respondents with a value of "1" on this variable made a transition during grades 6 or 7, and represented students who made the transition into their eighth grade school during early adolescence. The third transition variable represented students who made a transition into their current eighth grade school during grades 3, 4, or 5. None of these students were in high schools during the eighth grade. The comparison group for these dummy variables represented students who made the transition into a senior high school setting during grades 6, 7, or 8.

School demographics and characteristics. We created dummy variables to represent urbanicity and private/public/parochial affiliations. For urbanicity, we created two dummy variables. The first represented students who attended urban schools, and the

[2] It is possible that some students were in schools with differing grade structures during prior years; while it would be important and useful to examine these students for differing patterns, these data are unavailable.

second represents students who attended rural schools. The comparison group represented students who attended suburban schools.

For school type, we created two additional variables. The first represented students who were in a Catholic school, where a value of "1" represented being in a Catholic school during the eighth grade. We specifically included this measure because prior research has indicated that the organizational structure of Catholic schools is quite different than that of public schools; these organizational differences are related to teacher efficacy and satisfaction, variables that are related to student achievement (Lee, Dedrick, & Smith, 1991). A second dummy variable represented students who attended public schools during the eighth grade. The comparison group represented students who attended private schools or other (non Catholic) religious schools.

In addition, we included measures of the eighth grade enrollment, the percentage of minority faculty and of bilingual students in each school, a measure of how much drugs and alcohol were a problem in the school, a school-level measure of student absenteeism, the teacher-student ratio, and teacher salaries. These measures are described in Appendix II.

Results

We first examined zero order correlations between the student level variables. We then ran hierarchical linear models only using student-level data. Next, we examined the models controlling for the timing of the transition into the current eighth grade school. Finally, we present the results of the full hierarchical linear model which combines the

student-level data with school level measures of the timing of the transition, school demographics, and school characteristics.

Relations Between Student-Level Variables

In Table 1, we present the correlations among the student-level variables. Two of the dependent variables are moderately correlated with each other: early adolescents who report getting into trouble at school are also likely to report being victimized at school ($r = .31$). Victimization is also moderately related to locus of control: students who report being victimized feel that they have less control over their lives ($r = -.16$).

Adolescents who report getting into trouble at school have low scores on the achievement tests ($r = -.31$), report low personal locus of control ($r = -.25$), and do not have high future aspirations ($r = -.30$). There is a positive relation between engagement in bad behaviors and absenteeism ($r = .20$). These students also are more likely to feel that the quality of teaching in their school is poor ($r = .25$). In addition, perceiving that the school is dangerous and has problems is very moderately correlated with perceiving that the teaching is poor ($r = .13$).

HLM Model

The results of typical ordinary least squares multiple regression analyses do not account for the fact that students are nested in different types of schools. While it is possible to assign school-level variables to student-level analyses, such procedures are highly problematic (see Bryk & Raudenbush, 1992; Paterson, 1991). Consequently, we

used hierarchical linear modeling (HLM) to examine the effects of school characteristics, once student-level variables had been accounted for.

Variance between schools. We first calculated the intraclass correlations for the three dependent variables. This statistic represents the amount of variance that lies between schools. It was determined that 13.0% of the variance in victimization, 12.5% of the variance in getting into trouble for bad behavior, and 19.0% of the variance in perceiving school as dangerous/having problems lied between schools. The intraclass correlations were adjusted for the reliability of the measures (see Bryk & Raudenbush, 1992, for a discussion of the reliability in the context of HLM). It is not possible to explain adequately such between-group variance, using school-level measures, with typical OLS regression techniques. Indeed, it is likely that there are characteristics of the schools attended by the eighth graders in the present study that may account for this between-school variance. Consequently, we proceeded with the HLM analyses in order to identify school-level variables that might account for this variance.

Student-level model. We first developed a student-level model, which only contained student-level predictors. Results are presented in Table 2. All variables except for gender and minority status are standardized to z-scores; consequently, all effects may be interpreted as effect sizes. Television viewing was dropped from the models, since it was not significantly related to any of the dependent variables in the HLM analyses. The strongest effects are for gender: females are less likely to report being victimized (γ = -.22, $p<.001$) and are less likely to report getting into trouble for bad behavior (γ = -.45, $p<.001$) than are males. High achieving students are less likely than lower achieving

students to get into trouble for bad behavior in school (γ = -.17, p<.001). Perceptions of the teacher disinterest are moderately related to all of the dependent variables. When students feel that the teachers are disinterested, they report being victimized more often (γ = .12, p<.001), getting into trouble for bad behavior (γ = .16, p<.001), and perceiving their schools as being more dangerous and having more problems (γ = .11, p<.001). Students who hold high educational aspirations for the future are less likely to report getting into trouble for bad behavior than students who report holding lower aspirations (γ = -.12, p<.001) and are more likely to report perceiving their school as dangerous and as having problems (γ = .03, p<.001); however, aspirations are unrelated to victimization. Being absent from school is positively related to getting into trouble for bad behavior (γ = .11, p<.001).

HLM Model Controlling for Timing of the Middle School Transition

The three variables representing the various school transitions were modeled on the base in the second HLM model. These variables are school-level characteristics that are modeled on the student outcomes. Results are presented in Table 3.

We fixed the variance of all other student level variables, so that they would not freely vary between schools, since the purpose of the present study is to examine school effects specifically on the dependent variables. In addition, we had no substantive or theoretical reasons to believe that the relations between the predictor variables and the dependent variables would vary between schools. Recall that all of the student-level dependent variables (and independent variables) were measured for all students while the students were in the eighth grade.

Several of the transition variables emerged as significant predictors. Victimization occurred less often during the eighth grade when student made the transition into the eighth grade school during grades 3, 4, or 5 ($\gamma = -.19$, $p<.001$), or when students made their first major transition at grade 9 or later ($\gamma = -.23$, $p<.001$). In addition, making the transition into the current eighth grade school during grades 3, 4, or 5 was predictive of perceiving the eighth grade school as less dangerous/problematic ($\gamma = -.23$, $p<.001$), as was making the first major school transition at the ninth grade or later ($\gamma = -.51$, $p<.001$), as compared with making the transition into the eight grade school during grades 6 or 7.

At the student level, gender remained a strong predictor: female students reported getting into trouble less than did males ($\gamma = -.45$, $p<.001$), and reported being victimized less than males ($\gamma = -.23$, $p<.001$). Ethnicity was a moderately strong predictor of getting into trouble, with African American students ($\gamma = .27$, $p<.001$) and Latino American students ($\gamma = .22$, $p<.001$) reporting getting into trouble more often than students of other ethnic backgrounds.

Full HLM model. We next developed a full HLM model, which included additional school-level variables. One set of variables represented school demographics (urbanicity, public vs. private, etc.), while the other set represented characteristics of the school (size of the eighth grade class, attendance rates, teacher salaries, etc.).

In this model, the dependent variables are still students' self-reports of victimization, getting into trouble for bad behavior, and perceptions of the school as being dangerous and having problems. The effects of all of the school-level variables (timing of transition, school demographics, and school characteristics) are modeled on the intercept.

Thus the school-level variables are incorporated into the model, while student level variables are held constant. The residual parameter variance for all student level predictors remained fixed at zero. For the final model, non significant predictors were dropped from the analyses.[3]

In the HLM model predicting victimization, adolescents report being victimized less when they do not make the transition until at least the ninth grade ($\gamma = -.14$, $p<.001$), or when they make the transition into their current eighth grade school at a younger age, during grades 3, 4, or 5 ($\gamma = -.15$, $p<.01$). Victimization also is more prevalent in urban schools ($\gamma = .08$, $p<.01$) and in public schools ($\gamma = .10$, $p<.05$). Other school characteristics such as enrollment, percent minority faculty, and having drug/alcohol problems in school are only moderately related to victimization. School attendance, the percentage of bilingual students, teacher/student ratios, and teacher salaries are unrelated to victimization.

In examining the fixed student-level effects, female adolescents report being victimized less than males ($\gamma = -.22$, $p<.001$); in addition, students who perceive the teachers in their schools to be disinterested in students are more likely to report being victimized, after controlling for other individual and school-level variables ($\gamma = .12$, $p<.001$). Locus of control is negatively related to victimization ($\gamma = -.09$, $p<.001$) -- students with higher self-reported locus of control report being victimized less than do other students. Being a member of a minority group and plans for the future are unrelated to victimization, while SES is only weakly related to victimization ($\gamma = .03$, $p<.01$).

[3] Since dummy variables were used for the school transition and school demographics variables, all variables were included in the final analyses, in order to make comparisons across all groups.

For predicting getting into trouble for bad behavior, making the transition into the current eighth grade school during grades six or seven is related to greater incidences of getting into trouble for bad behavior ($\gamma = .09$, $p<.01$). Getting into trouble is less common in rural schools ($\gamma = -.07$, $p<.01$) and in public schools ($\gamma = -.19$, $p<.05$), compared with other schools. Getting into trouble for bad behavior is moderately related to drug/alcohol problems. Teacher/student ratio and teacher salary levels are weakly related to student reports of getting into trouble.

In terms of student-level variables, females report getting into trouble for bad behavior less than do males ($\gamma = -.45$, $p<.001$). Adolescents who perceive their schools as having disinterested teachers tend to get into trouble more often ($\gamma = .16$, $p<.001$). In this model, aspirations for the future ($\gamma = -.12$, $p<.001$), popularity ($\gamma = -.05$, $p<.001$), locus of control ($\gamma = -.09$, $p<.001$) and achievement ($\gamma = -.17$, $p<.001$) are negatively related to behavior. African American students ($\gamma = .26$, $p<.001$) and Latino American students ($\gamma = .22$, $p<.001$) are more likely to get into trouble than student of other ethnicities.

The strong effect of making the first major transition at grade nine or later was diminished from -.51 to -.22, after the school demographics and other school characteristics were added to the final model. Students report perceiving their school environments as less dangerous and having fewer problems when they make the transition at grades 3, 4, or 5 ($\gamma = -.16$, $p<.001$) or at the ninth grade or later ($\gamma = -.22$, $p<.001$). When compared to the stronger negative effects for making the transition at grades 3, 4, or 5, or after grade 9, it appears that students who make the transition during times other than early adolescence (either before or after early adolescence) perceive their schools as

being less dangerous and having fewer problems than do students who make the transition at grades 6 or 7 (during early adolescence, $\gamma = -.10$, $p<.015$).

The addition of the school demographics and school characteristics into the final HLM model helps to explain some of these findings. Indeed, the changes in the HLM coefficients from the transition HLM model (Table 3) and the final full HLM model (Table 4) suggest that it is not the timing of the school transition or the grade structure of the school alone that accounts for perceiving some schools as more dangerous and having more problems than others; rather, other school-level characteristics contribute to perceptions of school danger. Students are more likely to perceive their schools as being dangerous/having problems when they attend urban schools ($\gamma = .08$, $p<.01$) compared to rural and suburban schools. In addition, public schools are perceived as being more dangerous and having more problems than Catholic and private schools ($\gamma = .21$, $p<.001$). The size of the eighth grade class enrollment is positively related to perceiving the school as dangerous and having problems ($\gamma = .11$, $p<.001$). The proportion of minority faculty in the school, the proportion of bilingual students, problems with drugs and alcohol, and attendance rates are weakly related to perceptions of the school as being dangerous and haivng problems. The teacher/student ratio and teacher salaries are unrelated to perceiving school as dangerous/problematic.

In the prior models, females were less likely to report being victimized and to report getting into trouble for bad behaviors than males; in the final model, gender also emerged as a significant predictor of perceiving school as dangerous and having problems -- females were more likely to perceive their schools as being dangerous and having

problems than males ($\gamma = .08$, $p<.001$). As in the other models, perceptions of teacher disinterest were related to perceptions of the school as being dangerous and having problems ($\gamma = .10$, $p<.001$).

Discussion

Violence is a prevalent and enduring issue in American schools, particularly during the adolescent years (Elam & Rose, 1995; Furlong & Morrison, 1994; Straus, 1994). In addition, students often experience their first major school transition during early adolescence (Eccles & Midgley, 1989). Consequently, adolescents may become more motivated to engage in seemingly "bad" behaviors in some school environments than in others. There even is some evidence indicating that students may become numb to the effects of violence on perceptions of danger in school. For example, Sheley, McGee, and Wright (1992) found that more students report observing violence in school than the number of students reporting that they fear this violence.

The present study examined predictors of various aspects of violence during early adolescence. We were specifically interested in examining the prevalence of violent behaviors and perceptions of school safety within the context of schools during early adolescence. Although much violence occurs outside of schools (e.g., in gangs, homes, and other settings), we have limited the present study to violence within school environments.

School Transitions

Our major hypothesis regarding school transitions was confirmed: when students do not make a transition until at least the ninth grade, they report less incidences of victimization, getting into trouble less for bad behavior, and they are less likely to perceive their schools as being dangerous and having problems during the eighth grade. One unexpected finding was that students who made the transition into their current eighth grade school during grades 3, 4, or 5 also were less likely to report being victimized and were less likely to report perceiving their schools as dangerous and as having problems. Victimization, getting into trouble for bad behavior, and perceptions of the school as dangerous/problematic are not lessened for students making the transition during grades 6 or 7.

Prior research suggests that the particular grade level when the transition occurs is not particularly critical (Eccles & Midgley, 1989; Wigfield, Eccles, & Pintrich, 1996). Rather, schools with certain grade structures often tend to engage in practices that are incompatible with the developmental needs of early adolescents (Eccles et al., 1993). Prior research has demonstrated that these environments are related to declines in academic motivation, achievement, and social perceptions (Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). Results of the present study suggest that certain school environments (particularly those where the transition into the eighth grade middle school

occurs during early adolescence) are more conducive to problems of behavior and violence than are others.

Other Demographic Effects

There were several other noteworthy effects in the present study. Victimization and perceiving the school as unsafe were more typical in public schools than in other types of schools. Attending Catholic schools during early adolescence was found to be unrelated to victimization, getting into trouble, and perceiving school as unsafe. This is in line with other research (e.g., Lee et al., 1991) that has found other positive academic effects for religious schools. It is plausible that Catholic schools in particular may engage in practices that are more in line with the developmental needs of adolescents than other types of schools (Lee et al., 1991). Students reported getting into trouble for bad behavior less in public schools than in other types of schools. However, caution must be taken in interpreting this finding. Our measure was operationalized in terms of getting into trouble for bad behavior -- consequently, this negative effect may be indicative of public schools' responses to instances of bad behavior, rather than actual occurrences of bad behavior in these schools.

Violence is prevalent in both urban and rural areas, although the media often seems to focus on the prevalence of violence in urban settings. While we did find effects of urbanicity in the present study, they were not strong. Students in urban areas report feeling that their schools are more dangerous and have more problems than do students in suburban and rural areas. Also, students in rural areas report getting into trouble for bad behavior less than students in suburban and urban areas. However, the finding for rural

schools again may reflect these schools' responses to instances of violence, rather than actual indices of occurrences of violence. Urban students report being victimized more than suburban and rural students. Nevertheless, these effect sizes are rather small. Transition (school-structure) variables seem to make more of a difference in most cases than do variables of urbanicity. While the media is plagued with messages about the problems of our inner city schools, perhaps that message is a bit misleading -- it is probably not the schools themselves, but the interaction of teachers, students, and school procedures within the context of adolescent development that account for these "problems."

Other School Characteristics

In the present study, we controlled for a number of other school-level characteristics. Most of these variables had weak effects. The most noteworthy effects were for perceiving the school as being unsafe. Perceptions of school as unsafe were more typical in schools with larger eighth grade enrollments, in schools with a high proportion of minority faculty, and in schools with drug and alcohol problems.

Other research suggests that school size has an impact on student learning; specifically, research indicates that students often learn better in smaller schools (e.g., Lee, Bryk, & Smith, 1993; Lee & Smith, 1993). As school size increases, student learning may suffer due to less attention to individualized student needs. Results of the present study suggest that, based on eighth grade class size, students also perceive large schools as being unsafe environments. The combined effects of large sized classes and schools on

student achievement and on perceptions of safety may be particularly detrimental to low achieving students and to those students who experience school-related anxiety.

Drug and alcohol problems also have been associated with perceiving school as being dangerous and having problems. Indeed, some research suggests that students are almost twice as likely to fear being attacked in school when they feel that drugs are available (Bastian & Taylor, 1991).

Student-Level Variables

Many of the effect sizes for the student (individual) level variables were small. The most noteworthy effects were for gender: females reported being victimized and engaging in bad behaviors less than did males. Perceptions of the quality of teaching were moderately related to the outcomes: when students perceived the quality of teaching as poor, they were more likely to report being victimized, getting into trouble for bad behaviors, and perceiving that the school was dangerous/problematic.

Effects of minority status and SES were minimal. Minority students were slightly more likely to engage in bad behavior than were non-minority students; however, there were no effects of minority status on victimization or perceptions of the school as dangerous/problematic. It is important when assessing effects for minority students to control for SES (see Graham, 1994). In the present study, the effects sizes for SES were all .05 or lower; thus once the other variables have been accounted for, SES and minority status were not very powerful predictors of the outcome variables. This is in contrast to other studies, which suggest that certain aspects of violence and delinquency are more typical among lower SES adolescents than middle SES adolescents (e.g., Gold &

Petronio, 1980). Results of the present study indicate that once other school-level factors have been taken into account, differences in SES contribute little to the aspects of violence examined in the present study. Although other research suggests that ethnicity is often unrelated to problem behaviors during adolescence once SES has been taken into account (e.g., Henggeler, 1989), results of the present study suggest that African American and Latino American students report getting into trouble for bad behavior in school more than do other students, while ethnicity appears to be unrelated to instances of victimization. Some of these differences are probably attributable to the lack of clarity and consistency in defining violence in most research.

While issues of violence and behavioral problems are prevalent in high minority neighborhoods (Fox & Pierce, 1994), results of the present study suggest that factors beyond socioeconomic status and ethnicity may contribute to this phenomenon, at least inside school buildings. Indeed, violence may be more of a problem for minority and low SES adolescents who also attend schools that engage in developmentally inappropriate practices. Nevertheless, results of the present study suggest that once school-level factors have been accounted for, SES in particular contributes little to issues related to violence. However, in the present study we specifically limit our argument to three aspects of violence that are specifically related to schools. It is indeed plausible that violence is more prevalent outside of the school in minority communities (cf., Fox & Pierce, 1994); however, that issue is beyond the scope of the present study.

Why Are Problems of Violence More Evident in Certain Types of Schools During Early Adolescence?

In conclusion, we must reiterate that we do not believe (and the literature does not support) the idea that there is something inherently "bad" about making a school transition during early adolescence (and during the sixth or seventh grades, in particular). Rather, as demonstrated in a number of studies (e.g., Eccles & Midgley, 1989; Simmons & Blyth, 1987; Wigfield et al., 1991), the typical middle school that serves early adolescents often provides an environment that is developmentally inappropriate for the adolescent. While prior research has documented that this stage-environment mismatch is detrimental to achievement, motivation, and self-esteem (cf., Eccles et al., 1993), the present study extends these findings to issues of violence and behavior.

Other research indicates that violent behaviors vary according to a number of contextual and environmental variables. For example, Nisbett (1993) has found that southern portions of the US, as well as western portions of the US which were originally settled by southerners, tend to be more violent than other parts of the country. Nisbett argues that these effects may be due to differing economic and social circumstances that historically have been associated with the south. Consequently, if different environmental factors can have effects at the regional level, they certainly also may have notable effects (and more controllable effects) at the school level.

Thus the picture that emerges is one in which some early adolescents are entering middle school environments that ultimately lead to poor school performance, fewer opportunities for expressions of creativity and autonomy, lower self-esteem, increased perceptions of danger, and increased occurrences of victimization and violence. Since the HLM analyses utilized the NELS design weights and thus are generalizable to the US as a

whole, this is indeed an area which should be of great concern to parents, educators, and policy-makers.

School reform efforts aimed at middle grades education need to take a more comprehensive view of the developmental variables which change during the lives of early adolescents. Although schools may engage in numerous efforts aimed at enhancing motivation and achievement, schools must simultaneously consider issues related to the onset and development of violence (cf., Dryfoos, 1990). Some researchers (e.g., Maehr & Midgley, 1991) suggest that middle grades reform should occur at the school-level, using a top-down approach to reform -- rather than making numerous small, cosmetic changes, schools need to approach reform from an organizational perspective. Other researchers (e.g., Benson & Harkavy, 1991) suggest that the involvement of universities and communities in creation of community schools, in which students and parents can use the school for a variety of services after regular school hours, will help reduce violence.

The fact that a number of school-level variables emerged as moderately strong predictors in the present study, after controlling for student-level variables, suggests that future research should examine the ways in which these variables might affect aspects of violent behavior in school. Specifically, the relations between the timing of the middle school transition and aspects of violence must be examined more carefully. While we have made several suggestions as to reasons why these differences might emerge, future in-depth comparative studies are sorely needed in order to disentangle differences between school types. Future research and reform efforts that examine the multifaceted differences between elementary schools, middle schools, and high schools hopefully will lead to safer, more effective, developmentally appropriate learning environments for all students.

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Table 1

Zero Order Correlations Between Student-Level Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Victim	1.00												
2. Bad Behavior	.31	1.00											
3. Perceives Danger	.20	.12	1.00										
4. Female	-.13	-.25	.05	1.00									
5. Minority	.04	.12	.04	-.00	1.00								
6. Achievement	-.09	-.31	-.00	-.01	-.34	1.00							
7. Ability Grouping	.03	.01	.06	-.06	-.03	.03	1.00						
8. Absent	.06	.20	.07	.08	.04	-.15	.00	1.00					
9. Locus of Control	-.16	-.25	-.07	.02	-.10	.32	.03	-.12	1.00				
10. SES	-.05	-.17	-.01	-.02	-.31	.47	.06	-.12	.21	1.00			
11. Future Plans	-.08	-.30	.02	.08	-.07	.41	.06	-.15	.29	.39	1.00		
12. Popularity	.04	-.02	.01	.01	-.02	-.00	-.07	.05	-.16	-.11	-.17	1.00	
13. Poor Teaching	.17	.25	.13	-.04	-.05	-.10	-.01	.10	-.24	-.02	-.17	.14	1.00

Note. Female is coded 1 = female, 0 = male; minority is coded 1 = minority, 0 = non-minority

Table 2.

Student Level HLM Models

RANDOM EFFECTS	Victimization	Getting in Trouble for Bad Behavior	Perceiving School as Unsafe
Average for Intercept	.06*	.01	-.03
Student Characteristics			
Gender	-.22***	-.45***	.08***
SES	.02	-.00	.03**
African American	.08*	.27***	-.02
Latino American	-.05	.23***	-.09*
European American	.03	.19***	-.10**
Asian American	-.06	.17***	.03
Academic Variables			
Achievement	-.03***	-.17***	.03***
Teacher Disinterest	.12***	.16***	.11***
Ability Grouping	.03***	-.02**	.04***
Psychological/Behavioral Variables			
Popularity	.03***	-.05***	-.03**
Future Plans	.00	-.12***	.03***
Locus of Control	-.09***	-.09***	-.05***
Absenteeism	.03***	.11***	.03***

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

Gender is coded 0 = male, 1 = female; minority is coded 0 = non-minority, 1 = minority; all school variables are dummy variables, where 0 = school does not have this characteristic, 1 = school does have this characteristic.

Table 3.

HLM Models Controlling for Timing of Transition

RANDOM EFFECTS	Victimization	Getting in Trouble for Bad Behavior	Perceiving School as Unsafe
Average for Intercept	.16***	.01	.14***
Transition Variables			
Transition at 3,4, or 5	-.19***	-.00	-.23***
Transition at 6 or 7	-.01	.05*	.01
Transition at 9-12	-.23***	-.07*	-.51***
FIXED EFFECTS			
Student Characteristics			
Gender	-.23***	-.45***	.08***
SES	.02	.00	.04***
African American	.07	.27***	-.03
Latino American	-.06	.22***	-.10**
European American	.03	.19***	-.10***
Asian American	-.07	.16***	.01
Academic Variables			
Achievement	-.03***	-.16***	.03***
Teacher Disinterest	.12***	.16***	.10***
Ability Grouping	.02*	-.03***	.02**
Psychological/Behavioral Variables			
Popularity	.03***	-.05***	-.03***
Future Plans	.00	-.12***	.03***
Locus of Control	-.09***	-.09***	-.05***
Absenteeism	.03	.11***	.03***

Note. * p<.05 ** p <.01 *** p <.001

Gender is coded 0 = male, 1 = female; minority is coded 0 = non-minority, 1 = minority; all school variables are dummy variables, where 0 = school does not have this characteristic, 1 = school does have this characteristic.

Table 4.

Full HLM Model

RANDOM EFFECTS	Victimization	Getting in Trouble for Bad Behavior	Perceiving School as Unsafe
Average for Intercept	.05	.08	-.06
Transition Variables			
Transition at 3,4, or 5	-.15**	.04	-.16***
Transition at 6 or 7	.01	.09**	-.10**
Transition at 9-12	-.14***	-.06	-.22***
School Demographics			
Urban	.08**	.03	.08**
Rural	.01	-.07**	.05
Public	.10*	-.09*	.21***
Catholic	-.07	-.04	.04
School Characteristics			
Eighth Grade Enrollment	-.04**	-.03*	.11***
Percent Minority Faculty	.05***	-----	.08***
Percent Bilingual Students	-----	-----	.02**
Attendance	-----	-----	-.03**
Drug/Alcohol Problem	.04***	.03**	.09***
Teacher/Student Ratio	-----	-.02*	-----
Teacher Salary	-----	.04***	-----
FIXED EFFECTS			
Student Characteristics			
Gender	-.22***	-.45***	.08***
SES	.03**	-----	.05***
African American	-----	.26***	-.08*
Latino American	-----	.22***	-.14***
European American	-----	.20***	-.09**
Asian American	-----	.15***	-.02
Academic Variables			
Achievement	-.03***	-.17***	.04***

Teacher Disinterest	.12***	.16***	.10***
Ability Grouping	.02*	-.03***	.02*
Psychological/Behavioral Variables			
Popularity	.02***	-.05***	-.03***
Future Plans	-----	-.12***	.03***
Locus of Control	-.09***	-.09***	-.05***
Absenteeism	.03***	.11***	.03***

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

Gender is coded 0 = male, 1 = female; minority is coded 0 = non-minority, 1 = minority; all school variables are dummy variables, where 0 = school does not have this characteristic, 1 = school does have this characteristic.

Appendix I: Items Used to Compute Student-Level Scales

Measure	Items	Response Scale	Alpha
DEPENDENT VARIABLES			
Bad Behavior	During the first semester of the current school year, have any of the following things happened to you? I was sent to the office because I was misbehaving. I was sent to the office because of problems with my schoolwork. My parents received a warning about my attendance. My parents received a warning about my grades. My parents received a warning about my behavior. I got into a physical fight with another student.	0 = never 1 = once or twice 2 = more than twice	.76
Victimization	During the first semester of the current school year, how many times have any of the following things happened to you? I had something stolen from me at school. Someone offered to sell me drugs at school. Someone threatened to hurt me at school.	0 = never 1 = once or twice 2 = more than twice	.93
Perceives School As Dangerous and Having Problems	Indicate the degree to which each of the following are a problem in your school: Student tardiness Student absenteeism Students cutting class Physical conflicts among students Robbery or theft Vandalism of school property Student use of alcohol Student use of illegal drugs Student possession of weapons Physical abuse of teachers Verbal abuse of teachers	1 = serious 2 = moderate 3 = minor 4 = not a problem	.90

STUDENT LEVEL INDEPENDENT VARIABLES

Popularity	How do you think students in your classes see you? ..... as popular. ..... as important. ..... as athletic.	1 = very 2 = somewhat 3 = not at all	.65
Locus of Control	I don't have enough control over the direction my life is taking. In my life, good luck is more important than hard work for success. Every time I try to get ahead, something or somebody stops me. My plans hardly ever work out, so planning only makes me unhappy. When I make plans, I am almost certain I can make them work. Chance and luck are very important for what happens in my life.	1 = strongly agree 2 = agree 3 = disagree 4 = strongly disagree	.68
Television Viewing	During the school year, how many hours a day do you usually watch TV on weekdays? Weekends?	0 = don't watch TV 1 = less than 1 hr/day 2 = 1-2 hours/day 3 = 2-3 hours/day 4 = 3-4 hours/day 5 = 4-5 hours/day 6 = over 5 hours/day	----
Teacher Disinterest	Teachers are interested in students. Most of my teachers listen to what I say. The teaching is good. Teachers praise my effort. In class, I feel put down by my teachers.	1 = strongly agree 2 = agree 3 = disagree 4 = strongly disagree	.78
Ability Grouping	Sometimes students are put in different groups, so that they are with other students of similar ability. The next questions are about ability groups in certain school subjects. What ability group are you in for the following? Math Science	1 = high 2 = middle 3 = low 4 = aren't grouped 5 = don't know	----

	English Social Studies		
Plans After High School	As things stand now, how far in school do you think you will get?	1 = won't finish high school 2 = will finish high school 3 = vocational, trade, or business school after high school 4 = will attend college 5 = will finish college 6 = higher schooling after college	----
Socioeconomic Status	This variable is a standardized (z-score) variable pre-computed by NELS personnel. The variable is composed of measures of mother's occupation, father's occupation, mother's education, father's education, and family income.		
Achievement	Standardized score on NELS tests of English, mathematics, social studies, and science		.95
Absenteeism	How many days of school did you miss over the past four weeks?	0 = none 1 = 1 or 2 days 2 = 3 or 4 days 3 = 5 to 10 days 4 = more than 10 days	

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