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ABSTRACT

This study investigated the effects of schools' academic and disciplinary climates on student disengagement and dropping out, noting whether these effects varied by race/ethnic group. Data came from the High School Effectiveness Study (HSES), which allows contextual analysis of urban youth in their high schools, and the Common Core of Data, from the U.S. Department of Education. The final school sample size was 168. Student sample sizes were 3,927 for 12th grade disengagement analyses and 4,743 for dropout analyses. HSES provided student-level and school-level sampling weights. Race was the primary student-level variable. School-level variables were school problems, academic climate, truancy policy, and student body characteristics. For students who persisted to 12th grade, there were almost no race/ethnic differences in disengagement when 10th grade disengagement was controlled. Race differences in school effects disappeared after 10th grade, but only because more disengaged minority students disappeared from schools. There were significant differences among the race/ethnic groups in 10th grade disengagement levels. Higher socioeconomic status associated with lower dropout rate, and it created significant white-minority gaps. Students did best in authoritative schools and worst in neglecting schools. (Contains 65 references.) (SM)

URBAN YOUTH AND SCHOOLING: THE EFFECT OF SCHOOL CLIMATE ON STUDENT DISENGAGEMENT AND DROPOUT*

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INTRODUCTION

Student disengagement is the "most immediate and persistent issue" facing students and teachers today, concludes the National Center for Effective Secondary Schools. Its converse, engagement, is defined as "*the student's psychological investment in and effort directed toward learning, understanding, or mastering the knowledge, skills, or crafts that academic work is intended to promote*" (Newmann et al., 1992:12, emphasis in original). At a minimum, then, disengagement is the absence of such investment in academic work. One of the strongest indicators of disengagement is physical withdrawal from schooling – on a continuum from tardiness, cutting classes, and "playing hooky" (Carnegie Council on Adolescent Development, 1989; Fordham and Ogbu, 1986; Kindermann, McCollam, and Gibson, 1996; Lamborn et al., 1992), to chronic truancy and dropout (Connell et al., 1995; McCall 1994).

In the substantial literature on risk factors for truancy and dropout, few studies explicitly evaluate the impact of the "disciplinary climate" of schools (e.g., Bryk and Thum, 1989; Wehlage and Rutter, 1987; for a review see Wang et al., 1997), while a few others study the "academic climate" of schools (e.g., Gamoran and Mare, 1989; Pittman 1991). Most consider only family and individual factors, such as parents' education and students' test scores. Yet many students, regardless of background, become disengaged when they encounter the impersonal context of junior and senior high schools (Bowers 1985; Eccles et al., 1991; Newmann 1981). Intolerably high truancy rates and recent violent events in schools have led to a political climate favoring stricter discipline in schools. But stricter policies may have the unintended consequence of increasing student disengagement – both the attitude and the behavior (Gullatt and LeMoine, 1997; Meece and McColskey, 1997). There has been little empirical research in this area, but what research has been done suggests that strict policies may be ineffective (Quinn 1995) or even

counterproductive (Mount Diablo Unified School District, 1990). There is clearly a need for empirical research on factors in the school that foster or erode students' investment in their schooling.

The primary research question addressed in this paper is: *what are the effects of schools' academic and disciplinary climate on student disengagement, and do these effects vary for students of different racial/ethnic groups?* Both qualitative (Cusick 1973, 1983) and quantitative researchers (Bryk and Thum, 1989; Wehlage and Rutter, 1987) have described characteristics of schools that contribute significantly to student alienation and disengagement, such as bureaucratization and low academic standards. Conversely, schools in which students remain engaged combine high standards for academics and behavior with responsive adult concern (Coleman, Hoffer, and Kilgore, 1981; Rutter et al., 1979; Shouse 1996; Wehlage 1983).

Similar characteristics of parents and schools, along the dimensions of demandingness and responsiveness, contribute to similar differential outcomes in children. Prior research suggests this (Bryk and Thum, 1989; Wehlage and Rutter, 1987), as their descriptions of positive school climate echo descriptions of authoritative parenting. Wehlage (1983), in a study of effective truancy intervention programs, referred to their "family atmosphere" as being key to their success. In this study, I apply Baumrind's parenting typology to schools, testing the hypothesis that *schools are institutional parents, and that the same characteristics that produce positive outcomes for parents also produce positive outcomes for schools*. Hetherington (1993), in a study of children's adjustment to parental divorce, did apply parenting styles to schools, and found support for doing so. Students in authoritative schools had the best outcomes in achievement, social competence, and behavior, while students in neglecting schools had the worst outcomes. In contemporary American

society, schools have increasingly taken on parental functions; thus children are "parented" both at the family level and at the institutional level, in contradictory or complementary ways.

Other researchers (Cusick 1983; Fordham and Ogbu, 1986) have suggested that members of disadvantaged minority groups may be more susceptible to alienating characteristics in schools. There is a growing political movement toward more structure and discipline in schools, but little is known about possible consequences. Thus, *are strict truancy policies counterproductive in some contexts and for some groups?* There is little research in this area, but the results do suggest that strictness in some contexts may serve to further alienate students (Mount Diablo Unified School District, 1990). An important contextual factor to consider, besides the academic and disciplinary climate of the schools, is their socioeconomic and educational composition.[1]

SCHOOLS AS INSTITUTIONAL PARENTS

Baumrind (1967, 1978, 1991) classifies parenting styles according to their levels of demandingness and responsiveness (see Figure 1). Authoritative parenting is characterized by high demandingness (high standards for behavior and firm enforcement of rules), and high responsiveness (warmth and open communication). Authoritarian parenting is also characterized by high demandingness, but coupled with low responsiveness - the emphasis is on obedience and control. Permissive parenting is characterized by low demandingness (low standards for behavior, and self-regulation by the child), but can either be high in responsiveness (indulgent-permissive) or low (rejecting-neglecting). Children of authoritative parents have been shown to have higher social and cognitive competence compared to others, even when measured at adolescence (e.g., Dornbusch et al., 1987; Lamborn et al., 1991; Slicker 1998).

[1] By educational composition, I mean the relative proportions of remedial, general, and advanced students in the school.

Children are, of course, affected by their extra-familial environment before adolescence (Bronfenbrenner 1979). But it is in adolescence that children have the task of integrating themselves into their community as members in their own right (Newmann 1981). To do this, they need their peers, but they also need ongoing adult socialization (Csikszentmihalyi and Larson, 1984), from parents, teachers, school administrators, and adults in the community.

Coleman (1961) suggested that the mass education of age-mates in large, bureaucratic schools isolates adolescents from meaningful adult contact, leaving them little choice but to create adolescent societies. Precisely at the time in their development when adolescents are making life decisions with lasting consequences, and establishing their relationship with productive work, adults withdraw from them (Csikszentmihalyi and Larson, 1984), so that they are socialized more by peers than by adults. Being adolescent, peers' influence is more toward excitement and "fun" than toward skill development – learning the cognitive and emotional skills that lend themselves to adult productivity. It is not surprising that this socialization so often results in poor life decisions and disengagement from work.

Besides leaving adolescents to be socialized by peers, the typical urban public high school prioritizes "batch processing" and management of students (Cusick 1973) above meaningful adult attention and intellectual stimulation. Thus, much of the interaction students do have with adults involves disciplinary or management activities such as taking roll, obtaining hall passes, and checking late slips, rather than engaging instructional activities. The school's priorities are often clear to the students, who see themselves as being managed, controlled, and processed (Cusick 1973). They can see that the work they are asked to do is not particularly meaningful - often not even to their teachers (Newmann et al., 1992), and work without meaning is alienating (Bowers 1985; Newmann 1981). Urban public high schools are often alienating to their students (Seidman

et al, 1996; Wehlage and Rutter, 1987), but schools do vary in the degree to which they are alienating environments (Newmann 1981). Two critical areas in which schools may vary are the academic climate (i.e., achievement expectations, general engagement, student involvement) and the disciplinary climate (strict vs. lenient, fair or arbitrary, effective or ineffective). In each of these areas, schools may vary in the degree to which they are responsive or demanding. I suggest that the effects of these dimensions on student outcomes at the school level will be analogous to their effects at the family level. Therefore, I would expect to find the lowest rates of disengagement among schools that combine responsive concern with demands for performance and behavior.

A major element in the discipline system of schools is the truancy policy. While truancy policy is often set at the district level, it is enforced with considerable discretion by school administrators, to the degree that it may be perceived as arbitrary by students and teachers (Cusick 1983; Wehlage and Rutter, 1987). When truancy policy is too lenient or is unenforced, students may conclude that school personnel do not care about them (Newmann 1981), or that attendance is optional (Cusick 1973). When truancy policy is very strict and vigorously enforced, students may feel that they are virtual prisoners. Policies at either extreme would likely be counterproductive, contributing more to student alienation and disengagement than to engagement (Newmann 1981).

Considering dropout specifically, a number of authors have argued that in many cases students do not drop out as much as they are pushed out (Fine 1986; Fine and Rosenberg, 1983; Gaines 1998; Payne 1989; Wehlage and Rutter, 1989). According to Fine and Rosenberg (1983), dropouts are "expressing their unwillingness to tolerate injustices and discrimination in the classroom" (p. 119). Students who have had particularly harsh or humiliating experiences with the school's discipline system may be particularly prone to dropping out (Wehlage and Rutter, 1989). They may even express the belief (perhaps justified) that the school acted harshly against them

strategically, hoping to push them out (Gaines 1998). This represents an extreme breakdown of the institutional parent/child relationship, and may lead to the end of the relationship.

Students from disadvantaged minority groups may be especially vulnerable to alienation. If they doubt that they will be able to achieve occupational success, they may see the work they are asked to do as meaningless both in the short-term (as an engaging task) and in the long-term (as a task contributing to eventual occupational success). This is likely to be the case if these students live in a community characterized by high levels of stratification by race - that is, when they see that few like themselves are educationally or economically successful. Disadvantaged minority students are also more likely to attend larger, urban schools where processing and controlling students may be even more the focus than in suburban schools. And, members of groups that have experienced discrimination may be more likely to resent institutions that act to control them.

PREVIOUS LITERATURE

At the school level, this project is informed by the "school effects" literature. This area has had an unfortunate history, with an early record of controversy and poor methodology that quickly discouraged researchers. The first major school effects study was Coleman's Equality of Educational Opportunity Study (1966). Coleman and his colleagues found, infamously, that characteristics of schools appear to make no difference in the achievement of children. Variance in achievement is accounted for by family, peers, and community. The Coleman study was strenuously criticized for its conclusion that schools make no difference, implying that efforts to achieve equity for minority students by reforming schools were futile.

Edmonds (1979) countered this implication by identifying "effective" schools in disadvantaged urban areas, schools in which students performed better than predicted compared to similar students at other schools. Numerous researchers followed his lead, identifying "effective

schools" serving disadvantaged urban populations, and isolating characteristics of these schools that differentiated them from typical schools (for a review, see Levine and Lezotte, 1990). Much of this "effective schools" research was criticized for being methodologically flawed, relying on skewed samples and poor measures, and failing to account for socioeconomic variability within "disadvantaged" areas. These criticisms largely stifled this area of research after the early 1980s. Nonetheless, several characteristics of effective urban schools identified in this research became the basis of reform programs that were instituted by the mid-1980s in 40% of school districts in the U.S. - urban, suburban, and rural (Teddlie and Stringfield, 1993).

Contemporaneous with Edmonds, Brookover and his colleagues (1979) focused instead on "school effects." Criticizing the Coleman study for relying on "static" school measures (i.e., number of books in the library, teacher/student ratio, and the like), Brookover et al. hypothesized that the "normative climate" of schools contributed to achievement, but they were unable to confirm their hypothesis empirically due to multicollinearity among their school climate variables and social class controls. In stepwise regressions, whichever variable was entered first explained most of the variance in achievement.

In addition to problems with multicollinearity, school effects present methodological difficulties because school data are inherently hierarchical. Students are nested within classes, classes within schools, schools within communities, and so on. If class- or school-level data are treated as if they are at the student level, the assumption of independence of sample members is violated - the higher-level data are constant among classmates or schoolmates. This creates bias in analyses, deflating standard errors and therefore inflating the significance of coefficients. An appropriate technique for handling hierarchical data, hierarchical linear modeling, was only developed in the mid-1980s (see Raudenbush and Bryk, 1986).

Besides having these methodological difficulties, virtually all of the school effects literature was narrowly focused on one outcome - achievement - in one context - low-SES, urban, elementary schools. Cuban (1983) suggested that student attendance and student attitudes toward school be used as alternative outcome measures. In their review of the literature, Good and Brophy (1986) also cited the lack of studies using outcome measures other than student achievement, as well as the lack of studies in other contexts, such as middle and secondary schools, suburban and rural areas, and more affluent communities. In recent years, numerous researchers have expanded the scope of the literature using national datasets such as High School & Beyond and the National Educational Longitudinal Study (NELS: 88), but most of these studies still use achievement as the outcome variable (e.g., Lee, Smith, and Croninger, 1997; Parcel and Dufur, 1998). There remain very few studies linking school climate to other outcomes, specifically engagement or disengagement (e.g., Bryk and Thum, 1989; Wehlage and Rutter, 1987).

Yet engagement is a necessary condition for achievement (Coleman, Hoffer, and Kilgore, 1981; Neumann et al., 1992). Lamborn and her colleagues (1992) found strong intercorrelations among measures of engagement, misconduct (including lateness and absence), and achievement, but did not attempt to demonstrate causality. Most research on disengagement has been focused on identifying risk factors for truancy and dropout, but, with few exceptions (Bryk and Thum, 1989; Gamoran and Mare, 1989; Pittman 1991; Wehlage and Rutter, 1987), researchers in this area have considered only family and individual factors, such as parents' education and students' test scores, and not school factors.

In their study of schools' contribution to dropout, Wehlage and Rutter (1987) relied on the questionable practice of relying on individual student reports of school climate, but their findings are thought-provoking nevertheless. They performed a discriminant analysis, hoping to correctly

classify high school students into dropout, stay-in, and college-bound groups. Their analysis produced two functions. The "academic" function accounts for 89% of the variance between groups and differentiates the college-bound from others. Variables that load heavily on this function are academic expectations, ability, socioeconomic status, and grades. The "social context" function accounts for the remaining 11% of variance between groups, and differentiates dropouts and "stay-ins." Context is interpreted as "a range of school conditions experienced by students that might influence them to drop out" (p. 74). Among the significant variables in this function are truancy, discipline problems, and lateness. Wehlage and Rutter argue that these individual problems measure school context because they represent "conflict with and estrangement from institutional norms and rules" (p. 77). Thus what differentiates dropouts from otherwise similar graduates is their degree of conflict with the institution.

To demonstrate this point, the authors report frequency distributions of non-college bound students' ratings of the fairness and effectiveness of school discipline. From 52% to 64% of blacks, Hispanics, and whites rated their school's discipline poor or fair (rather than good or excellent), with dropouts giving slightly more negative ratings than non-college bound graduates. Nearly twice as many dropouts as graduates reported having been suspended at least once and having cut class occasionally. Since their data also show that, as late as tenth grade, most dropouts still intended to graduate and even pursue higher education, the authors conclude that school conditions, specifically the discipline system, contribute to student disengagement, lowered expectations, and dropout. The high negative ratings non-college bound graduates give to their schools' discipline indicate that many may stay in school reluctantly. Students may be both alienated by a discipline system that seems unfair, and influenced by the climate of truancy which ineffective discipline allows.

Bryk and Thum (1989) set out "to investigate directly the effects of structural and normative features of schools both on the probability of dropping out and on the strongest behavioral predictor of dropping out, absenteeism" (p. 355). They conceptualize dropout, as I do in this project, as the endpoint of a process of "drifting away" from school. While they do not believe that schools are "the primary culprit" in student alienation, they concur with Newmann's (1981) conclusion that schools do contribute to the alienation of students, and in varying degrees. Improving on Wehlage and Rutter's (1987) methodology, they used hierarchical linear models to estimate student-level and school-level effects on tenth grade absenteeism and twelfth grade dropout status. On the student level, the variables are sex, Hispanic, black, SES, and academic background (pre-high school). The school level variables are in 5 groups:[2] perceived teacher quality, academic press, disciplinary climate, curricular differentiation and commonality, and social and academic background composition (includes variables such as affluent school, high % at-risk, >40% minority, highly differentiated SES, size). They also compared public with Catholic schools.

They found that absenteeism rates are lower in schools with the following characteristics: high perceived quality of teaching, strong academic press, high percentage of students in the academic track, and low levels of disciplinary problems, curricular diversity, and SES diversity. These variables explain 67% of school-level variance in absenteeism rates, and explain away the public-Catholic difference. In their model predicting likelihood of dropping out, the results are similar, with an interesting exception. Base dropout rates are higher in schools where discipline is perceived to be fair and effective (based on average student ratings from within-school samples). Discipline also contributes to social class differentiation - lower-class students are more likely to

[2] The authors refer to these groups as factors, but the data are not reduced - variables are entered individually in 5 group models, and those that prove significant are advanced to composite models. I question this approach, as the variables within these groups are significantly correlated. In the presence of multicollinearity, coefficients from these models would not be reliable.

drop out in schools where discipline is perceived to be fair and effective. Bryk and Thum leave this anomaly uninterpreted, but I suspect that schools' average ratings of fairness and effectiveness may mask important within-school differences. That is, do students' perceptions of fairness vary with their level of disengagement, and, consequently, with their experience of having been disciplined?

While Teddlie and Stringfield (1993) studied achievement in elementary schools, they demonstrated that different aspects of school academic climate are important in high- versus low-SES contexts. For example, they found that ineffective high-SES schools are "feel good" schools, where teachers have unrealistically high perceptions of their students' performance, and do not press them to achieve. In contrast, ineffective low-SES schools suffer an overall negative climate, with teachers who have low expectations and students who feel criticized and uncared-for. These results suggest that it is important to control for school-level SES when estimating the effects of school climate on disengagement. A criticism of their analysis is that they include racial composition in the measure of SES used to classify schools, along with class indicators such as parents' educational level. Their rationale in doing so is that race is highly correlated with class in Louisiana. But, as Massey (1998) argues, this strategy "[perpetuates] a conflation of race and class that unfortunately has become endemic to literature on urban poverty" (p. 572). Having adopted this strategy, it is impossible to discern effects of race that are not class-based, such as the effect of racial discrimination.

DATA AND METHODS

Data are from the High School Effectiveness Study (HSES), and the Common Core of Data (CCD) - both U.S. Department of Education data sets. Designed to allow contextual analysis of urban youth in their high schools, HSES is an outgrowth of the National Educational Longitudinal Study of 1988 (NELS: 88). From the high schools attended by NELS: 88 sample members in tenth

grade (1990), a sample of 247 schools in the central city and suburbs of the 30 largest metropolitan areas was selected for HSES. For each school, the NELS sample was augmented with additional randomly-selected students to achieve representative within-school samples of approximately thirty students (NCES 1996). Thus, the 1990 HSES sample includes approximately 9,000 students: 3,000 from NELS and 6,000 augmented students. Of these, 7339 completed a student questionnaire and a cognitive achievement test. Compared to a nationally-representative sample, the urban HSES sample contains disproportionate numbers of Asian-American (9.4%), Hispanic (17.4%), and black (15.6%) respondents.[3] In 1992 a follow-up wave of data was collected, when most of the respondents were in twelfth grade.

The sample for this study is restricted to students attending public schools. Restricting the sample to public school students reduces 10th grade sample size to 5219 (the number of schools is 172). Four additional schools are lost due to closure, missing administrator questionnaires, and student non-response (number of students lost is 39). Finally, students are lost through transfer and death. Thus, the final school sample size is 168, and the student sample sizes are 3927 for 12th grade disengagement analyses, and 4743 for dropout analyses. HSES provides both student-level and school-level sampling weights, which are used in all analyses reported here except the dropout analyses (for reasons which are explained later).

Student-Level Variables

Because the students are nested within schools, I use hierarchical linear models to estimate school effects on disengagement (Bryk and Raudenbush, 1992). The small size of the within-school student samples (ranging from 5 to 50, mean of 23, s.d. of 9.3) limits the number of independent variables that may be included at the student level. For this study, race is the primary

[3] Native Americans represent less than 2% of the sample, and are therefore not included in analyses.

student-level variable of interest. Gender, family socioeconomic status, academic ability, locus of control, and 10th grade disengagement are included as controls.

[Table 1a about here]

The student-level independent variables are drawn from the 1990 (10th grade) student file (see Table 1a for descriptive statistics). Race is recoded as a set of dummy variables - Asian, black, and Hispanic - with white as the reference category. Family socioeconomic status is a standardized composite variable based on parents' education and occupation, family income, and household possessions. Academic ability is a standardized composite of math and reading scores on the cognitive achievement test administered to study participants in tenth grade. Students with lower ability are likely to become discouraged, and disengage from schooling (Rumberger et al., 1990). Locus of control is a standardized scale: lower values indicate that the student believes that external factors control her/his success, higher values indicate that the student believes that internal factors control her/his success. This variable is included because studies (e.g., Rumberger et al., 1990) have found that dropouts are likely to have lower levels of internal control than other students.

Disengagement is operationalized in this study using students' self-reports of lateness and class-cutting in 1990 (10th grade) and 1992 (12th grade for most), and their 1989-90 and 1991-92 absences as recorded in their official transcripts. In the self-report items, students were asked how many times they had been late for school and how many times they had cut or skipped class during the previous term. In each wave, they were limited to a set of ordinal categories: in 1990, never, 1 to 2 times, 3 to 6 times, 7 to 9 times, over 10 times (no category includes 10); in 1992, never, 1 to 2 times, 3 to 6 times, 7 to 9 times, 10 to 15 times, and over 15 times. The number of categories is sufficient for the variables to be treated as continuous (using four or more categories as the rule of

thumb). To allow this, I recoded values to the midpoints of each category (with "over 10 times" recoded as 10, and "over 15 times" recoded as 17). This solution is not ideal - though categorical variables may be treated as continuous variables they still introduce measurement error. Also, students may be unable to accurately recall their behavior for the previous term, or they may under-report deviant behavior. To offset the effect of under-reporting by students, I also use the number of absences recorded in the transcript file. Because the absence counts combine excused with unexcused absences, this variable will be inflated for some students. The inflation may be quite small, however. Reynolds et al. (1980) found that less than 10% of absence among a sample of secondary school students was due to illness. To create more robust measures of disengagement, while minimizing the effects of student under-reporting and official over-reporting, I combined the three measures for each grade using confirmatory factor analysis (see Table 3 for factor loadings and explained variance).

[Table 3 about here]

Both Diseng10 and Diseng12 are standardized variables (mean of 0, standard deviation 1). This means that my models predict change (or continuity) in relative disengagement across the sample, rather than in absolute disengagement. On average, students follow a trajectory of increasingly disengaged behavior as they approach the end of high school. It is for this reason that the ordinal categories for lateness and skipping change to include higher frequencies in 1992. Ideally, I would have a baseline measure of disengagement prior to entering high school, so that I could capture all of the high school effects. With a 10^{th} grade measure, some school effects are likely to have already occurred (Lee and Bryk, 1989). In this dataset, 8^{th} grade data exists only for the original NELS sample members ($1/3^{rd}$ of the sample). It would be possible to replace missing values using multiple imputation, as I do for other missing data (multiple imputation is explained in

detail later in the paper), but with that much missing data a high number of imputations would be necessary to insure reliability. This would have been prohibitive, given the number and complexity of models analysed.

Dropout, a Bernoulli variable, is based on the HSES 1992 student status variable. It is coded 1 for students listed as being dropouts or unlocatable, zero for all others. The latter are students who have not been attending the sampled school, and who have not requested that their records be transferred to another school or program. I assume for this study that they are simply dropouts who have not been officially recorded as such.

Because highly disengaged students should be more likely than others to drop out of school, my dependent variable, 12th grade disengagement, may be affected by selection bias: that is, the coefficients I estimate may be affected by the loss of highly disengaged dropouts from the 12th grade sample. To test for possible bias, I estimated Heckman selection models (GET CITE). In these models, two equations are estimated simultaneously: an OLS model that predicts values of the outcome variable, given the effect of explanatory variables; and a PROBIT model that predicts the likelihood of cases being present in the sample when the outcome is measured. The Heckman model showed no significant selection effect operating in these data.

School-Level Variables

Variables from the 1990 school administrators' file include measures of school problems, academic climate, truancy policy, and student body characteristics.

School Climate Components

To create school climate variables, confirmatory factor analysis was used. Appropriate variables from the student and administrator files with adequate variability were identified as

measures of responsiveness and demandingness; these lists were then divided into measures of academic or disciplinary climate. For each sublist, bivariate correlations were used to test the appropriateness of including these variables in confirmatory factor analysis. A few variables were eliminated which were not significantly correlated with other variables in their set. Table 3 lists the factors, variable lists, and factor loadings resulting from factor analysis.

Responsiveness Factors

Academic responsiveness is the degree to which the school climate is characterized by warmth expressed toward students, and two-way communication regarding academic matters. Administrator and student measures are analyzed separately because they are not significantly correlated with one another.

Administrator measures (ACRESPAD): five measures that address the two aspects of academic responsiveness described above, warmth expressed toward students (two items measuring teacher attitudes) and two-way communication (three items measuring the degree to which student input is sought and used).

Student measures (ACRESPST): four measures that also address the two aspects of responsiveness: warmth and nurturance from teachers (two items, one measuring the *lack* of teacher nurturance), and two-way communication (two measures: one of teacher interest, the other of teacher listening).

There is only one measure of disciplinary responsiveness (DISFAIR) in the data set, and it comes from the student questionnaire. Students were asked for their agreement or disagreement with the statement, "discipline is fair at this school." For comparability with the factor scores, this variable is standardized for analysis (because it is not a factor, it does not appear in Table 3; descriptive statistics for the unstandardized variable appear in Table 1b).

[Table 1b about here]

Demandingness Factors

Demandingness is the degree to which the school climate is characterized by high standards for performance and behavior, and by enforcement of rules to meet those standards.

The measures of academic demands are from the administrator questionnaire (ACDEMAD). These four items address what is often referred to as "academic press," the degree to which students are expected to work hard and challenge themselves academically.

Administrator measures (PUNISH): This factor is based on seven variables from the administrators' questionnaire. For the first six, administrators were asked to identify their customary punishment for a range of student offenses, from skipping class to skipping three or more days of school, first or second occurrence. For each variable, I compared the administrator's response to the modal response for that variable. For example, the modal punishment for "skipping class – first offense" is detention. Administrators reporting using detention received a score of zero on a strictness of punishment variable for that offense. Those reporting less than detention received a negative score. And, those reporting using suspension received a positive score. The last variable loading on this factor measures the number of days a student must be absent before being considered truant (this variable loads negatively since a larger number of days would indicate leniency). To test for possible curvilinearity in the effect of disciplinary demands, a quadratic term (PUNISHSQ) is included in analyses.

Student measures (DISCDEMS): two items that measure students' perception of the standards for behavior in their school. For a school to score high on this factor, students must not only perceive the rules to be strict, but must also perceive that the rules are regularly enforced.

School Styles

Using these seven climate components, I created additive scales of responsiveness and demandingness.[4] Schools with values below zero on each scale are considered "low" on that scale; schools with values above zero are considered "high." I then assigned "parenting styles" to schools based on their placement in Baumrind's typology (see Table 1).[5] For example, a school that is "high" on both responsiveness and demandingness is "Authoritative." The result is four groups of approximately equal size, represented with dummy variables: Authoritarian, Permissive, and Neglecting (Authoritative is the reference group).

School-Level Control Variables

As a set, the following variables are included in analysis to control for the socio-demographic composition of schools, and for the context of disciplinary problems in which administrators carry out policies and in which students make decisions about behavior. (Descriptive statistics are reported in Table 1b.)

Disciplinary Problems (DISCPROB) is the result of confirmatory factor analysis using four indicators from the 1990 administrators' questionnaire (see Table 3 for the variables and factor loadings). The Daily Attendance Rate loads negatively since high values indicate fewer truancy problems. For the other three variables, administrators were asked to assess to the extent of the given disciplinary problem in their school, ranging from "not at all a problem" to "a serious problem." Inclusion of this variable allows analysis of the differential effectiveness of the four school styles in promoting engagement beyond 10th grade, given that schools vary in the extent to which disengaged behavior is a problem when students are in 10th grade.

[4] I used additive scales rather than second-order factor analysis because the administrator and student measures of academic responsiveness are not highly correlated. Thus the administrator variable does not load significantly on the second-order factor, though it is, arguably, an important contributor to the climate of the school.

School Size is a standardized variable based on the 1990 tenth grade enrollment of the school. Tenth grade is used rather than the total school size as some schools include grades 9 to 12 while others include only grades 10 to 12. Cohort size is a good measure of the student's most immediate reference group within the school.

I use a set of variables to control for the socioeconomic and ability composition of schools, both the mean levels of SES and ability and their distribution. School mean SES and ability can be aggregated from the within-school samples, along with the standard deviations of SES and ability within the samples. However, school mean SES and school mean ability are highly correlated (.784), and cannot be included in the same model.[6] Instead, I control for the mean level of ability using variables measuring the size of the low ability (remedial) and high ability (Advanced Placement) student populations.

Remediation (REMED) is also the result of factor analysis, with details provided in Table 3. Both indicators (% of students in remedial reading, and % of students in remedial math) are from the administrators' questionnaire and have continuous distributions (see Table 1b for descriptive statistics for remedial math – the distribution of remedial reading is very similar, and not reported in the table). I combine the two using factor analysis to create a more robust measure of the extent of remediation. This variable is used in models predicting school effects on dropout.

Advanced Placement Students (APSTUS) is a standardized variable created from a single indicator – the percent of students taking Advanced Placement classes. This variable is used in models predicting school effects on 10^{th} and 12^{th} grade disengagement.

[5] This is similar to the method used by Rumberger et al (1990), in their study of family influences on dropout.
[6] Test regressions indicated that variance inflation is significant in models including both variables.

Multiple Imputation

I use NORM software for multiple imputation (Schafer 1997). Multiple imputation uses Monte Carlo simulation to replace missing data with plausible values generated from the covariance structure of the data. Although NORM is designed to operate under an assumption of multivariate normality, it has been proven to perform well with categorical or skewed data (Schafer and Olsen, 1998). The program allows imputed values of categorical variables to be rounded to the nearest valid category. Also, skewed variables may be transformed to approximate normality before imputation and transformed back afterward. A critical requirement of multiple imputation is that data are missing at random -- that is, missingness must not be determined by the missing value.

The process is very straightforward: imputation is repeated *m* times (3 to 5 imputations are the norm), creating *m* completed data sets with varying replacement values. Analysis is performed on these data sets using any appropriate technique and software, and results are combined by NORM using Rubin's Rules for Scalar Estimands (1987). Essentially, this involves taking the simple mean of the *m* coefficient estimates. For the standard error of the coefficient (and significance tests), the mean of the squared standard error is corrected for the degree of variance among the *m* estimates. (That is, if the coefficient estimates vary a great deal among the analyses, the standard error is increased, thus reducing significance of the coefficients.)

In this study, I imputed missing student values for those who skipped individual items on the grade 10 (1990) questionnaire, or who were enrolled in school at 12th grade but did not complete the 1992 survey (n = 388). I imputed missing administrator response values for approximately 30 schools where only the identifying and demographic items on the 1990 questionnaire were answered.

Multilevel Modeling

Hierarchical linear modeling is appropriate for use in analyses where cases are grouped within units, such as multiple observations per respondent, or students within schools. In traditional regression models, observations are assumed to be independent of one another. Because of this the error terms (or residuals) are assumed to vary randomly from case to case. When cases share a context, their values on the dependent variable may be influenced by common unmeasured contextual variables; thus, their residuals may be correlated. The larger this correlation, the greater the inflation of significance tests and the likelihood of Type I error (Kreft and de Leeuw, 1998).

Hierarchical modeling for a continuous dependent variable is expressed in equations as follows. Level 1 is ordinary least squares regression (the random effects model), estimated for each group:

$$Y_{ij} = B_{0j} + B_{1j}(X_{1ij} - \text{mean}X_{1j}) + \ldots B_{kj}(X_{kij} - \text{mean}X_{kj}) + e_{ij,}$$

where Y_{ij} is the value of the dependent variable for student i in school j. Because of my theoretical interest in racial differences in disengagement within schools, the independent variables are centered on the school mean for each variable. In this case, the level 1 intercept (B_{0j}) is the unconditional school mean for Y, rather than the mean outcome when all X's are zero. The coefficients (B_{1j} to B_{kj}) represent the "gap" in Y associated with X; for example, the black-white gap in disengagement.

For the Bernoulli dependent variable, Dropout, I use HLM with a LOGIT link. The level 1 equations are:

$$\text{Prob}\,(Y=1|B) = P$$

$$\text{Log}\,[P/(1-P)] = B_{0j} + B_{1j}(X_{1ij} - \text{mean}X_{1j}) + \ldots B_{kj}(X_{kij} - \text{mean}X_{kj}) + e_{ij,}$$

where P is the probability that Y equals one given the values of X and the estimated betas. The coefficients represent the change in log-odds of dropout for a one unit change in X. One limitation to the LOGIT model is that sampling weights cannot be used. Therefore, all results for dropout models presented in this paper are limited in their generalizability, though the sample of schools is rather large, including schools from both urban and suburban areas, and in all regions of the U.S.

The coefficients from the level 1 models become the dependent variables at level 2, in a series of equations:

$$B_{0j} = \gamma_{00} + \Sigma \Gamma_0 W_j + \ldots u_{0j}$$

$$B_{1j} = \gamma_{10} + u_{1j}$$

$$\vdots$$

$$B_{kj} = \gamma_{k0} + \Sigma \Gamma_k W_j + \ldots u_{kj}$$

The level 2 intercepts ($\gamma_{00} \ldots \gamma_{k0}$) are the mean school intercept and slopes. The first equation above is the mean effects model: level 2 variables (W_j's) are added to explain variance in the intercept (the school means). The equation for B_{1j} above allows the slopes to vary randomly between schools and returns a significance test for the mean slope (γ_{10}), but does not model school effects. Finally, the equation for B_{kj} includes level 2 variables to explain variance in the slopes of a level one variable. HLM is superior to an earlier method for such estimation, "slopes-as-outcomes" analysis (Burstein, Linn, and Capell, 1978), which relied on least squares regression to estimate group effects on each slope individually. HLM estimates group effects on the intercept and all slopes simultaneously using an iterative maximum likelihood procedure.

RESULTS AND DISCUSSION

Means Comparisons by Race

[Table 2 about here]

Table 2 presents comparisons of means by race/ethnic group for the continuous independent variables (locus of control, SES, and ability), and the three dependent variables (DISENG10, dropout, and DISENG12). All of the between group differences are significant, with the largest differences for the SES and ability means. Hispanics have the lowest means for both ability test scores and SES; while Asians have the highest mean for ability, and whites have the highest mean for SES. For locus of control, Asians have the lowest mean, whites the highest, with blacks and Hispanics more similar to Asians than to whites. Looking at the dependent variables, Asians have the lowest means for all three. Blacks have the highest mean disengagement at 10^{th} grade, and the highest proportion dropping out. In the 12^{th} grade, their mean disengagement is relatively low, and equal to that of whites. This suggests that many of the more disengaged black students drop out before 12^{th} grade. The situation for Hispanic students is very different. They have relatively high mean disengagement in 10^{th} grade and a high proportion of dropouts, yet they have the highest mean disengagement in 12^{th} grade. Since the loss of disengaged students through dropout does not reduce mean disengagement, Hispanic students who remain in school continue to have significant problems with disengagement.

Random Effects – Student Level Variables

Table 4 reports results of nested student-level models on DISENG12 and Dropout. In model one, the explanatory variables are limited to gender and race, and DISENG10.[7] The intercept is not significantly different from zero, which is what would be expected with a

standardized dependent variable. Since the independent variables are group-mean centered, significant coefficients indicate a significant "gap" between groups in the mean disengagement scores. DISENG10 has a large and highly significant positive effect on DISENG12. Female and Asian students are significantly less disengaged than their reference groups – respectively, males and whites. The model explains 30.2% of the within-school variance. Adding SES, locus of control, and ability to the model changes very little. The effect of Asian becomes slightly larger and more significant, but none of the added variables has a significant effect, and the percent variance explained does not change significantly.[8]

[Table 4 about here]

Model 3 reports changes in the log-odds of dropping out associated with the independent variables. The coefficient for Female is highly significant and negative, indicating a lower probability of dropping out for girls. The coefficient for DISENG10 is highly significant and positive. While the coefficient for black is significant and positive, it is not as large as we might expect, given that blacks drop out at twice the rate of whites in the overall student sample. Similarly, the coefficient for Hispanic is not significant at all. The very high 10th grade disengagement levels of blacks and Hispanics appears to account for most of their increased likelihood of dropout as compared to whites.

In Model 4, SES, locus of control, and ability are added. Both locus of control and ability are highly significant and negative; net of DISENG10, gender, and race, students with internal locus of control and higher ability are less likely to drop out. With the addition of locus and ability, the coefficients for female, Hispanic, black, and DISENG10 are considerably reduced, with black

[7] White is the reference category for the race variables.
[8] In a student-level model predicting DISENG10, both SES and locus of control are significant and negative: thus it seems that the full effects of SES and locus on disengagement are realized by the 10th grade. In a model predicting DISENG12 with DISENG10 *not* controlled, locus of control is negative and highly significant, and SES is not.

becoming insignificant. Since locus of control contributes to DISENG10, but ability does not (see footnote 8), this suggests that controlling for locus reduces the effect of DISENG10 in this model, and that controlling for ability reduces the coefficients for the race variables.

School Effects on 10th Grade Disengagement

As described in the Data Section, I use 10th grade disengagement as a baseline measure for the outcome variables. Yet, as Lee and Bryk (1989) point out, some of the school effects I hope to capture are likely to have already occurred by the 10th grade. The models reported in Table 5 are an attempt to gauge the extent of school effects already present in the 10th grade baseline variable. Since the independent and dependent variables are measured contemporaneously, the models do not prove causation, only association. Column one reports the ANOVA model, which partitions the total variance in disengagement into within-school and between-school components. The reliability for the intercept is quite high (.661, not in table), indicating reliable measurement of the dependent variable. Between-school variance is 20.2% of the total variance, suggesting that school effects models are worthwhile. The second column reports results of a constrained model using school controls and most of the style component variables. Because all variables in this model are contemporaneous, I excluded explanatory variables that might be influenced by the values of the dependent variable. For variables based on student responses, I analyzed correlations between the student variables and disengagement. The variable "DISFAIR" is significantly correlated with DISENG10 (.138), so it is not included in the constrained model. Neither is ACRESPST, whose component variables are correlated with DISENG10 (from .100 to .170). DISCPROB is not included in either the constrained or the full model, because I would expect the administrators' assessment of discipline problems in the school to be based, in part, on the disengagement level of the 10th graders in the sample.

[Table 5 about here]

Of the coefficients in model two, only that for ACRESPAD is significant. Net of the other characteristics (including school size and intake), schools which are responsive to students on academic matters have lower mean levels of disengagement among 10th graders. This model explains 25.4% of the between-school variance. In model three, ACRESPST and DISFAIR are added. Both are insignificant, do not add to the explanatory power of the model, and do not significantly affect the values of the intercept or other coefficients. Because these variables do not appear to affect the results, I am able to estimate model 4, substituting the school styles variables for the complete set of component variables included in model 3. In this model, both PERMISSV and NEGLECTG are significantly and positively associated with disengagement. SIZE also has a significant positive effect. The results of models two, three, and four suggest that school climate has already had a significant effect on student disengagement by 10th grade, controlling for the socio-economic and ability intake of the school. Therefore, by controlling for 10th grade disengagement as a baseline measure in models predicting 12th grade disengagement and dropout, I may significantly understate the full effect of school climate in those models, as Lee and Bryk (1989) maintain. Yet school climate variables in those models are still significant.

School Effects on 12th Grade Disengagement

Table 6 reports the results of several mean effects models, that is, models in which school-level variables are used to predict the schools' mean 12th grade disengagement. The first model includes control variables only, and explains 25.3% of the between-school variance in DISENG12. Enrollment and Discipline Problems have significant positive effects on DISENG12, which is as expected. The significant positive effect of AP Students on DISENG12 is rather unexpected. From the student-level models, we know that ability does not have a significant effect on 12th grade

disengagement for individuals, so the effect of the size of the AP student group is distributed across ability levels (that is, it is not the AP students who are more disengaged, or the non-AP students). The standard deviation of ability in the school is insignificant, suggesting that it is not the contrast between AP and non-AP students on ability that contributes to disengagement. Rather, I argue that it is the partitioning of students into AP classes that contributes to school-wide disengagement. This interpretation is consistent with Coleman's argument about the "common school," that is, that curricular differentiation leads to a less integrated community with less attachment to school (Coleman, Hoffer, and Kilgore, 1981). Another possibility is that large numbers of AP students increase the level of academic competition in the school, leading to disengagement among the losers (Bryk and Driscoll, 1988). Additional evidence is the insignificance of the SES variables. Thus, it is not the socio-economic intake or distribution of the school that affects disengagement, or the achievement distribution, but rather how students are partitioned by the curriculum of the school.

[Table 6 about here]

In the next model, school styles are added, with Authoritative as the reference category. This significantly increases the between-school variance explained, to 29.4%. Authoritarian, Permissive, and Neglecting are uncentered; therefore, the intercept represents the mean disengagement of Authoritative schools with mean values for the control variables. The intercept is negative and significant, indicating that Authoritative schools have the lowest mean disengagement of the four groups, as predicted. The coefficient for Neglecting is significant and positive. Authoritarian and Permissive have positive, but insignificant coefficients: their levels of disengagement are between the two extremes, but not significantly different from either. The effects of the school control variables remain unchanged in this model.

In the final model, school climate components are substituted for the school styles. Of these, two are significant, and both are responsiveness variables: ACRESPAD has a significant, negative effect on disengagement, while DISFAIR has a significant, positive effect. Thus, mean disengagement is lower when school staff value student feedback and have positive regard for students, but higher when students perceive discipline in their school to be fair. The latter finding replicates that of Bryk and Thum (1989). Perhaps students are more likely to view their school's disciplinary practices as fair when those practices are relatively lax.

The non-significant factors are also interesting. Academic Responsiveness (Students) has no effect on disengagement. The variables contributing to this factor measure students' perceptions of their relationships with their teachers, but these perceptions appear to be less important in predicting disengagement than perhaps more formal structures for assessing and using student feedback (Newmann 1981). Academic Demands are also not significant, contrary to what some research suggests (e.g., Coleman, Hoffer, and Kilgore, 1981; Bryk and Thum, 1989.) Very interesting in light of recent school reforms is the finding that strictness of punishment does not have a significant effect on disengagement. Looking at the school control variables in this model, School Enrollment loses significance when the climate factors are added. This change is consistent with the idea that what is lost in larger schools is two-way communication with students and the perception of high disciplinary standards. Overall, this model does the best job of explaining between-school variance (42.1%).

In the student-level models described in the previous section, the slopes of the race variables were found to vary significantly between schools. Therefore, I estimated models regressing school controls, styles, and climate components on the race slopes. The models are not reported here, because none of the school variables had a significant effect on the race slopes.

Essentially, for students who persist to 12th grade, I find no differences by race in the effect of school composition or climate. As detailed below, racial differences *are* apparent in school effects on the probability of dropping out.

School Effects on Dropout

Tables 7a through 7d present the results of three slopes and intercepts models. Except for the ANOVA intercept, reported in Table 7a, the tables present results from equations that were estimated simultaneously, in three iterative, maximum likelihood procedures (controls only, controls plus styles, and controls plus climate components). For example, the effects of the school control variables on the school intercepts are reported in Table 7a, while the simultaneously-estimated effects of the same variables on the race slopes are reported in Tables 7b, 7c, and 7d. The full set of student-level variables (race and gender, plus DISENG10, SES, locus of control, and ability) is controlled for in the control, style, and component models reported here.

[Table 7a about here]

Beginning with Table 7a, the ANOVA column reports the overall school mean log-odds of dropout, which is highly significant and negative. This is expected, since in most schools the majority of students do not drop out.

The coefficients in column 2, the control variable model, indicate that the strongest effect on school mean dropout is the school's mean SES: students are less likely to drop out of schools with high mean SES than with low mean SES. Students in schools with many students in remedial classes are more likely to drop out. School enrollment, discipline problems, and the distributions of SES and ability are not significantly associated with dropping out.

School style variables are added to the model in column 3. None are significant, but controlling for school style does increase the significance of remediation. Because the style

variables are entered uncentered, the intercept in this model represents the mean log-odds of dropping out in an authoritative school with values at the grand mean for the control variables. Replacing the style variables with the climate components in column 4 changes the result very little: the effect of school mean SES becomes somewhat more negative with climate controlled. For schools that are similar on the other controls and in climate, higher affluence is strongly associated with lower probability of dropping out.

The models on race slopes reported in Tables 7b to 7d yield several interesting findings. Looking first at Table 7b column 1, on average, Asian students have the same probability of dropping out as white students (i.e., the mean slope is insignificant), but the slope does vary significantly across schools. School mean SES has a strong positive effect on the Asian slope: that is, Asian students are more likely to drop out than similar white students in higher SES schools. Asian students are also more likely than whites to drop out when their school has a high level of discipline problems. The addition of school styles (in column 2) does little to improve the model. The addition of climate components does have an interesting result: ACDEMAD is significant and positive, while the effect of school mean SES becomes smaller and less significant. Asian students are more likely to drop out than white students (with SES, locus, and ability controlled) when academic demands in the school are high. The effect of school mean SES likely becomes smaller because high SES schools tend to be more academically demanding. Lee (1994), in an ethnographic study of Asian students in an academically-oriented high school, found that both high- and low-achieving students were burdened by attempts to live up to the "model minority stereotype" that Asians are excellent students. This was particularly difficult for low-achieving students, who suffered acute embarrassment and found little support.

[Table 7b about here]

Table 7c reports school effects on the black slope (the black-white gap). The intercept of the control variable model is insignificant, indicating that, on average, black students are no more or less likely to drop out of school than similar whites. Net of other effects, however, black students are somewhat less likely than whites to drop out when attending large schools, and somewhat more likely than whites to drop out of higher SES schools, or schools with more discipline problems.[9] The model with school styles shows a significant black-white gap in the effect of styles. Again, because the style variables are added uncentered, the intercept represents the black slope in authoritative schools with mean values on the controls. It is significant and negative, indicating that black students are less likely to drop out than whites in authoritative schools. Black students are also more likely than whites to drop out of permissive or neglecting schools. The addition of the styles variables causes discipline problems to become insignificant. Thus, an authoritative climate may serve to protect black students from the negative effects of discipline problems. The components model offers further insight. The significant climate component is perceived disciplinary demands. Net of other effects, black students are less likely than white students to drop out of their school if students there perceive strong disciplinary demands, and more likely than whites to drop out in schools with lax disciplinary demands. While high academic demands may render Asian students more vulnerable to dropout, high disciplinary demands are especially protective for black youth. Note, however, that strictness of punishment is not significant: what seems to matter is a climate of high behavioral expectations.

[Table 7c about here]

Finally, Table 7d reports school effects on dropout for Hispanic students. As with Asian and black students, Hispanic students are no more or less likely to drop out than white students with similar characteristics. Of the variables in the control variable model, only school mean SES has a

[9] The effect of the standard deviation of SES just fails significance in all three models.

significant effect, which is positive, as it is for Asians and blacks. Looking at the style model, though the style variables are not significant, including them increases the significance of school enrollment. Compared to similar white students attending the same style of school, Hispanic students are less likely to drop out of large schools, and more likely to drop out of small schools.[10] In the components model, the effect of school mean SES becomes larger and more significant. Two of the components variables have significant effects, both positive – ACRESPST and PUNISH. Net of other effects, Hispanic students are more likely than whites to drop out in schools where teachers are very responsive to students, and less likely than whites to drop out in schools where teachers are less responsive to students. Hispanic students are also more likely to drop out in schools with strict punishment, and less likely to drop out in schools with lax punishment.

[Table 7d about here]

SUMMARY AND CONCLUSION

In general, my findings support the appropriateness of applying parenting styles to schools. As with studies of outcomes for individual children, my study of aggregate outcomes shows that students do best in authoritative schools, and worst in neglecting schools. Students do continue to benefit from an adult presence in their lives into late adolescence, not only at home, but also in school (Coleman 1961; Csikszentmihalyi and Larsen, 1984).

For students who persist to 12th grade, there are almost no race/ethnic differences in disengagement when 10th grade disengagement is controlled (Asians are slightly less disengaged than the other three groups). While there are significant school effects on 12th grade disengagement, these effects apply equally to all groups. But this result is due to the very different

[10] This effect is also seen in the black slopes model.

effects by race on dropping out of school. Essentially, race differences in school effects disappear after 10th grade, but only because more of the disengaged minority students disappear from schools.

There *are* significant differences among the race/ethnic groups in 10th grade disengagement levels. Asians and whites are less disengaged in 10th grade than blacks and Hispanics, and also less likely to drop out between 10th and 12th grades. Among 12th graders, the gaps have partly closed. Asians are still the least disengaged students, but blacks and whites are similar, even without ability or SES controls. This suggests that many of the more disengaged black students drop out before 12th grade. The situation for Hispanic students is very different. Hispanics are still the most disengaged group at 12th grade, though they have a high proportion of dropouts. Since the loss of disengaged students through dropout does not reduce mean disengagement, Hispanic students who remain in school continue to have significant problems with disengagement.

Although high mean SES is associated with lower mean dropout rates for schools, it creates significant white-minority gaps: all 3 minority groups have a higher probability of dropout than whites in higher SES schools, and lower probability of dropout than whites in lower SES schools. Is there a particularly harmful effect for minority students in more affluent schools, even if minority students are similar to whites in SES and ability? Perhaps, in such environments, as Fordham and Ogbu (1986) suggest, there is a cost to minority students (particularly black and U.S. born Hispanic students) in pursuing academic achievement. Or minority students may see themselves as less likely to benefit from academic success than their white peers. Conversely, is there a harmful effect for white students in less affluent schools? Or, do both effects exist?

Among the more intriguing findings in this study are these: that Asian students are more likely than whites to drop out of school when academic demands are high and when discipline problems are high. These findings, I believe, support Lee's (1994) contention that the "model

minority" stereotype can be damaging to Asian students, particularly those who are not able to live up to the high expectations the stereotype generates.

Among the four racial/ethnic groups in my sample, black students seem most affected by the parenting style of their school, with student SES and ability controlled. I do not control for family structure in the models reported here, but I do know that only a minority of black students in this sample (38%) live with both parents, while from 63% to 80% of Hispanics, whites, and Asians live with both parents. Hetherington (1993) found the strongest school parenting effects among children living with a non-authoritative single parent. It may be that I have captured a similar effect. School style, specifically disciplinary demands, may be particularly important to black students who experience relatively lower responsiveness and demandingness at home. I plan to explore this further with this sample in a study of the interaction of at-home and in-school parenting styles.

This study raises several questions that I plan to address in future research. While I have estimated the differential effects of school parenting style on students from 10^{th} to 12^{th} grade, I miss the early high school period, when some school effects are likely to have occurred. In future work I intend to follow the trajectory of disengagement from the 8^{th} grade to the 12^{th} (or to dropout). In these models, I have been unable to assess interactions between home and school parenting style: will I find, as Hetherington (1993) did, that authoritative schools are particularly helpful, and neglecting schools particularly harmful, to students with neglecting parents at home? Finally, I intend to explore further the characteristics and setting of the four styles of schools, and gauge the likelihood that the students who most need authoritative schools are able to attend them.

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Figure 1. Baumrind's Typology of Parenting Styles (1978, 1991).

		DEMANDINGNESS: HIGH	DEMANDINGNESS: LOW
RESPONSIVENESS	HIGH	AUTHORITATIVE	PERMISSIVE
	LOW	AUTHORITARIAN	NEGLECTING

IN SCHOOLS:

RESPONSIVENESS -- warm student-teacher relations, two-way communication about academics and behavior.

DEMANDINGNESS -- high expectations for student behavior and performance, adult authority.

Table 1a. Descriptive Statistics for Student-Level Variables.

	Enrolled 12th Grade (n = 3927)		Including Dropouts (n = 4743)	
Variable	Mean	Std. Dev.	Mean	Std. Dev.
Female (=1)	0.500		0.490	
Asian (=1)	0.101		0.091	
Black (=1)	0.194		0.217	
Hispanic (=1)	0.232		0.248	
SES[a]	0.005	0.835	-0.048	1.020
Locus of Control[a]	-0.009	0.635	-0.016	1.002
Ability[b]	49.526	10.063	48.207	10.050
Lateness, Grade 10	3.156	3.137	3.440	3.290
Skipping, Grade 10	1.755	2.809	2.010	3.020
Absences, Grade 10	9.997	12.365	9.310	13.088

a. These variables are standardized with mean 0, s.d. 1 in the HSES dataset.
b. This variable is standardized with mean 50, s.d. 10 in the HSES dataset.

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a. These variables are standardized with mean 0, s.d. 1 in the HSES dataset.
b. This variable is standardized with mean 50, s.d. 10 in the HSES dataset.

Table 1b. Descriptive Statistics for Selected School-Level Variables (n = 168).

Variable	Min.	Max.	Mean	Std. Dev.
Grade 10 Enrollment	48.00	1432.00	429.77	277.73
% Minority	0.00	100.00	36.46	35.53
% in Remedial Math	0.00	80.00	12.66	13.49
% AP Students	0.00	75.00	8.97	11.31
Mean Ability[a]	36.73	62.82	48.65	5.04
S.D. Ability[a]	3.06	11.70	8.80	1.61
Mean SES[a]	-1.05	1.20	0.03	0.45
S.D. SES[a]	0.34	1.10	0.66	0.13
% Daily Attendance	71.00	100.00	91.62	5.01
Cutting a Problem (4=serious)	1.00	4.00	2.38	0.77
Students Evaluate Courses (1=not used, 4=very impt.)	1.00	4.00	1.71	0.99
Learning High Priority (5=very)	1.00	5.00	3.68	0.88
Teachers Interested[a] (4=very)	2.06	3.35	2.76	0.18
Rules are Strict[a] (4=very)	2.10	3.21	2.69	0.22
Discipline is Fair[a] (4=very)	2.20	3.12	2.66	0.18

a. These variables are aggregated from within-school student samples.

Table 2. Means of Student-Level Variables by Race/Ethnicity.

Variable	Asian (n=433) [a]	Black (n=1019)	Hispanic (n=1176)	White (n=2114)	% variance btw. groups
Locus of Control	-0.19	-0.08	-0.11	0.10	1.1 ***[c]
SES	0.12	-0.18	-0.80	0.40	22.7 ***
Ability	53.14	43.82	44.12	51.63	15.7 ***
Diseng10	-0.27	0.21	0.13	-0.12	2.7 ***
Dropout	0.10	0.27	0.24	0.13	2.8 ***
	(n=395) [b]	(n=753)	(n=911)	(n=1868)	
Diseng12	-0.11	-0.03	0.13	-0.03	1.0 ***

a. Weighted n's including dropouts.
b. Weighted n's for enrolled grade 12 students.
c. Group means are significantly different at $p < .001$.

Table 3. Disengagement and School Climate Factors.[a]

FACTOR	VARIABLES	DESCRIPTION	LOADING
DISENGAGEMENT			
10th Grade (DISENG10)	S1S10A	Number of Times Late for School	0.810
	S1S10B	Number of Times Cut or Skipped Class	0.791
	S2RAB89	Number of Absences for 1989-90	0.486
12th Grade (DISENG12)	S2S9A	Number of Times Late for School	0.828
	S2S9B	Number of Times Cut or Skipped Class	0.793
	S2RAB91	Number of Absences for 1991-92	0.525
SCHOOL CLIMATE			
Academic Responsiveness, Administrator (ACRESPAD)	S1C47A	Importance of student eval. of teacher performance	0.569
	S1C47B	Importance of student eval. of course content	0.799
	S1C47C	Importance of student satisfaction with courses	0.845
	S1C93F	Teacher morale is high	0.485
	S1C93K	Teachers have negative attitudes about students	-0.545
Academic Responsiveness, Students (ACRESPST)	S1S7G	Teachers are interested in students	0.809
	S1S7H	When I work hard, teachers praise my effort	0.781
	S1S7I	I often feel "put down" by teachers in class	-0.659
	S1S7J	Most teachers listen to me	0.864
Academic Demands, Administrator (ACDEMAD)	S1C93B	Students place high priority on learning	0.786
	S1C93D	Teachers press students to achieve	0.789
	S1C93E	Students are expected to do homework	0.788
	S1C93J	Students encouraged to take academic classes	0.734
Disciplinary Demands, Students (DISCDEMS)	S1S7C	Rules for behavior are strict at this school	0.814
	S1S7O	Misbehaving students often get away with it	-0.814
Disciplinary Demands, Administrator (PUNISH)	S1C96B1-3	Punishment for skipping class, 1st time	0.653
	S1C96C1-3	Punishment for skipping 1-2 days, 1st time	0.791
	S1C96D1-3	Punishment for skipping 3+ days, 1st time	0.726
	S1C96BB1-3	Punishment for skipping class, 2nd time	0.864
	S1C96CC1-3	Punishment for skipping 1-2 days, 2nd time	0.865
	S1C96DD1-3	Punishment for skipping 3+ days, 2nd time	0.727
	S1C24	# of days before student is considered truant	-0.501
SCHOOL CONTROLS			
Disciplinary Problems, Administrator (DISCPROB)	S1C26	Daily average attendance rate	-0.677
	S1C95A	Tardiness a problem at this school	0.721
	S1C95B	Absenteeism a problem at this school	0.819
	S1C95C	Class-cutting a problem at this school	0.794
Remediation (REMED)	S1C30B	% of students receive remedial reading	0.871
	S1C30C	% of students receive remedial math	0.871

a. All factors explain > 50% of the joint variance except for ACRESPAD (45%).

Table 4. Effects of Student-Level Variables on 12th Grade Disengagement and on Log-Odds of Dropping Out.

	on Diseng12		on Dropout[b]	
	Two	Three	Four	Five
Intercept	-0.020	-0.020	-1.406 ***	-1.336 ***
Female	-0.111 *[a]	-0.110 *	-0.169 ***	-0.114 *
Hispanic	0.013	0.009	0.156	-0.013
Black	-0.106	-0.105	0.256 *	0.019
Asian	-0.155 +	-0.163 *	-0.090	-0.081
Diseng10	0.492 ***	0.488 ***	0.268 ***	0.200 ***
SES		-0.011		0.007
Locus of Control		-0.023		-0.109 ***
Ability[c]		0.006		-0.284 ***
% Within School Variance Explained	30.2	30.3		

a. *** p < .001, ** p < .01, * p < .05, + p < .10 (two-tailed tests).

b. Coefficients represent change in log-odds of dropping out for one unit change in X.

c. This variable is standardized with mean of 0, s.d. of 1.

Table 5. School Effects on 10th Grade Disengagement (n = 168).

	Model 1	Model 2	Model 3	Model 4
Intercept	-0.019 [a]	-0.056	-0.058	-0.036 *
School Enrollment		0.033	0.028	0.057 +
AP Students		0.052	0.051	0.056
Ability Standard Dev.		-0.017	-0.015	-0.017
School Mean SES		-0.061	-0.059	-0.055
School SES Standard Dev.		0.393	0.378	0.334
Responsiveness				
Academic (Administrator)		-0.091 **	-0.092 **	
Academic (Students)			0.015	
Disciplinary (Students)			0.008	
Demandingness				
Academic (Administrator)		0.020	0.021	
Disciplinary (Students)		-0.040	-0.044	
Disciplinary (Punishment)		-0.017	-0.018	
Disciplinary (Punishment Squared)		0.040	0.041	
School Styles, Authoritative Omitted				
Authoritarian				0.097
Permissive				0.208 *
Neglecting				0.198 *
Student-Level Variance (σ^2)	0.440			
School-Level Variance (τ)	0.111			
% of Variance in Diseng10 that is Between Schools	20.2			
% Between School Variance Explained		25.4	25.9	18.4

a. ** p < .01, * p < .05, + p < .10 (two-tailed tests).

Table 6. School Effects on 12th Grade Disengagement (n = 168).

	Model 1	Model 2	Model 3	Model 4
Intercept	-0.021 [a]	-0.042	-0.144 *	-0.073 +
School Enrollment		0.079 *	0.089 *	0.054
AP Students		0.066 *	0.072 *	0.069 *
Ability Standard Dev.		-0.006	-0.001	-0.001
School Mean SES		0.084	0.092	0.074
School SES Standard Dev.		0.322	0.301	0.301
Discipline Problems		0.077 *	0.069 *	0.075 *
School Styles, Authoritative Omitted				
Authoritarian			0.115	
Permissive			0.127	
Neglecting			0.169 +	
Responsiveness				
Academic (Administrator)				-0.078 *
Academic (Students)				-0.031
Disciplinary (Students)				0.067 +
Demandingness				
Academic (Administrator)				0.024
Disciplinary (Students)				-0.048
Disciplinary (Punishment)				0.007
Disciplinary (Punishment Squared)				0.028
Student-Level Variance (σ^2)	0.442			
School-Level Variance (τ)	0.093			
% of Variance in Diseng12 that is Between Schools	17.4			
% Between School Variance Explained		25.3	29.4	42.1

a. * $p < .05$, + $p < .10$ (two-tailed tests).

Table 7a. School Effects on Mean Log-Odds of Dropout (n = 168).

	ANOVA	CONTROL[b]	STYLE[b]	COMPONENT[b]
Intercept (school mean log-odds)	-1.507 ***[a]	-1.550 ***	-1.516 ***	-1.597 ***
School Enrollment		-0.005	-0.010	-0.003
AP Students		0.158 *	0.162 *	0.169 *
Ability Standard Dev.		-0.009	-0.009	-0.007
School Mean SES		-0.648 ***	-0.655 ***	-0.733 ***
School SES Standard Dev.		0.404	0.405	0.349
Discipline Problems		0.069	0.069	0.110
School Styles, Authoritative Omitted				
Authoritarian			-0.067	
Permissive			-0.069	
Neglecting			-0.032	
Responsiveness				
Academic (Administrator)				0.073
Academic (Students)				-0.073
Disciplinary (Students)				-0.006
Demandingness				
Academic (Administrator)				0.084
Disciplinary (Students)				-0.016
Disciplinary (Punishment)				0.010
Disciplinary (Punishment Squared)				0.016

a. *** p < .001, ** p < .01, * p < .05, + p < .10 (two-tailed tests).

b. Models control for race, gender, ability, locus of control, SES, and 10th grade disengagement.

Table 7b. School Effects on Log-Odds of Dropout -- Asian Students (n = 168).

	CONTROL[b]	STYLE[b]	COMPONENT[b]
Intercept (mean slope)	-0.066	-0.172	-0.186
School Enrollment	-0.163	-0.121	-0.120
AP Students	-0.041	-0.015	-0.049
Ability Standard Dev.	0.021	0.020	0.054
School Mean SES	0.900 ***[a]	0.898 ***	0.868 **
School SES Standard Dev.	-0.018	0.007	0.146
Discipline Problems	0.210 *	0.179 +	0.210 +
School Styles, Authoritative Omitted			
Authoritarian		0.308	
Permissive		-0.132	
Neglecting		0.230	
Responsiveness			
Academic (Administrator)			-0.017
Academic (Students)			0.190
Disciplinary (Students)			-0.176
Demandingness			
Academic (Administrator)			0.246 *
Disciplinary (Students)			0.010
Disciplinary (Punishment)			0.048
Disciplinary (Punishment Squared)			0.103

a. *** p < .001, ** p < .01, * p < .05, + p < .10 (two-tailed tests).

b. Models control for gender, ability, locus of control, SES, and 10th grade disengagement.

Table 7c. School Effects on Log-Odds of Dropout -- Black Students (n = 168).

	CONTROL[b]	STYLE[b]	COMPONENT[b]
Intercept (mean slope)	-0.018	-0.418 *	0.078
School Enrollment	-0.391 *[a]	-0.413 **	-0.377 *
AP Students	-0.153	-0.164	-0.164
Ability Standard Dev.	-0.043	-0.015	0.002
School Mean SES	0.531 +	0.538 +	0.525 +
School SES Standard Dev.	1.318	1.243	1.387
Discipline Problems	0.232 +	0.200	0.203
School Styles, Authoritative Omitted			
Authoritarian		0.315	
Permissive		0.728 *	
Neglecting		0.549 +	
Responsiveness			
Academic (Administrator)			-0.081
Academic (Students)			0.110
Disciplinary (Students)			0.012
Demandingness			
Academic (Administrator)			-0.097
Disciplinary (Students)			-0.314 **
Disciplinary (Punishment)			0.059
Disciplinary (Punishment Squared)			-0.136

a. *** p < .001, ** p < .01, * p < .05, + p < .10 (two-tailed tests).

b. Models control for gender, ability, locus of control, SES, and 10th grade disengagement.

Table 7d. School Effects on Log-Odds of Dropout -- Hispanic Students (n = 168).

	CONTROL[b]	STYLE[b]	COMPONENT[b]
Intercept (mean slope)	-0.027	-0.188	-0.099
School Enrollment	-0.193	-0.224 +	-0.221
AP Students	-0.060	-0.087	-0.103
Ability Standard Dev.	-0.085	-0.062	-0.054
School Mean SES	0.654 *[a]	0.643 *	0.716 **
School SES Standard Dev.	1.023	0.907	0.733
Discipline Problems	0.122	0.107	0.145
School Styles, Authoritative Omitted			
Authoritarian		0.074	
Permissive		0.377	
Neglecting		0.259	
Responsiveness			
Academic (Administrator)			-0.056
Academic (Students)			0.247 *
Disciplinary (Students)			-0.022
Demandingness			
Academic (Administrator)			0.088
Disciplinary (Students)			-0.142
Disciplinary (Punishment)			0.238 +
Disciplinary (Punishment Squared)			0.107

a. ** p < .01, * p < .05, + p < .10 (two-tailed tests).

b. Models control for gender, ability, locus of control, SES, and 10th grade disengagement.

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