

Are Dropout Decisions Related to Safety Concerns, Social Isolation, and Teacher Disparagement?

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While some other nations are on the verge of universal secondary education, the U.S. completion rate has stubbornly plateaued at a lower level. Much research to date has focused on the relationships between various student characteristics and behaviors and the incidence of high school dropout. Traditional research on the individual level causes of high school dropout shows that socio-economic context and race/ethnicity are among the most important predictors of subsequent drop out (Alexander, Ackland, and Griffin, 1976; Ekstrom, Goertz, Pollack, and Rock, 1986; Rumberger, 1983). Low standardized test scores and poor school performance are also associated with higher dropout rates (Bachmann, Green, Wirtanen, 1971; Coombs and Cooley, 1986; Rumberger, Ghatak et al, 1990). Student attitudes, plans and behaviors are also related to dropout, and students who drop out report higher levels of dissatisfaction and alienation from school and lower levels of self-esteem (Bachmann et al, 1971).

In addition to student level explanations for dropout, there has been a great deal of research on organizational processes and ways that school personnel exert control over dropout decisions. Although expulsion is relatively rare (Lawrence, 1998, p. 103), schools use administrative procedures which accomplish the same ends with age cut-offs, grade point average minimums and attendance regulations (Elliot and Voss, 1974; Gottfredson and Gottfredson, 1985; Mann, 1987; Riehl, 1999; Toby, 1983). Bryk and Thum (1989) also argue that school structure, social organization, and ethos all significantly affect student retention and alienation.

The present study contributes to both of these literatures by investigating a phenomenon related to both individual and school level characteristics—school safety. Safety is a major concern. Its importance has been underscored with recent national events involving school shootings. Reports of inner city school violence, which have refocused the public's attention on school safety (Kaufman et al, 1998). Although schools are usually safer than their neighborhoods (Lawrence, 1998), a national survey indicates that in 1992 (the year we are studying), 14.0% of students report being threatened with a weapon, and 24.6% threatened without a weapon, while 5.1% were injured with a weapon, and 12.8% injured without a weapon (Condition of Education, 1999, p. 80). These events may have a profound influence on students and their likelihood to stay in school, though little research has examined the causal relationships between school safety and academic outcomes.

While past research has explained high school dropout as a function of individual attributes or school procedures, the present study considers how interactions with peers and teachers can also affect students' withdrawal from school. In particular, we focus on the influence of peer threats, social isolation and teacher disparagement, factors which have not been considered by prior research, even research that has carefully focused on

process (e.g. Wehlage and Rutter, 1986; Goldschmidt and Wang, 1999; Bryk and Thum, 1989).

Thus, while research has rightly pointed to the importance of socioeconomic background and academic achievement, it has not considered how students' social experiences may also contribute to dropout decisions. This paper examines which students are threatened and how these experiences affect their withdrawal behaviors in school and their decisions to leave school. We also consider how teachers respond to students experiencing these threats and how teachers' responses may influence dropout decisions.

We consider the role of social isolation and teacher disparagement not only with regard to their effects on students' experience of threats, but also independently on withdrawal behaviors and eventual dropout. Research focusing on the more complex processes involved in school withdrawal and drop out highlights the role of social isolation and alienation in leading to drop out (Finn, 1989; Newmann, 1981). We examine social isolation and its effects on threats, withdrawal and dropout because we believe that the social interactions that individuals have with their peers in school is a critical component of the high school experience, and that social integration is essential for retention. Steinberg (1996) documents the primacy of peer groups in students' lives (for better and for worse) and Newmann has called for a serious consideration of the role of alienation and isolation in school problems such as poor achievement and violence (Newmann, 1981). Tinto's (1987) research on withdrawal among college students has shown social integration to be a significant predictor of whether a student remains in school. Other work, specifically with high school students, has demonstrated that participation in certain extracurricular activities (namely athletics and fine arts) significantly reduces drop out while also increasing self esteem and locus of control (Holland and Andre, 1987; McNeal; 1995).

The additional focus on the role of teachers is prompted by the above research as well as work that indicates that students' perception of teacher quality affects absenteeism, and in schools where faculty are engaged and interested in students, overall absenteeism and drop out rate is lower (Bryk and Thum, 1989). We consider the role of teacher disparagement as it affects threats and withdrawal on the basis of that past research and because teachers act as institutional representatives, providing important signals to students about whether or not they belong in school. As Bernstein and Rulo (1976) note, when teachers focus all of their attention on students' problem behaviors, they can inadvertently contribute to withdrawal and eventual drop out. We consider this process as well as teacher's contribution to students' perception of threats.

DATA AND METHODS

This paper uses data from the National Educational Longitudinal Study to examine these issues. This is a national survey which follows students every two years from eighth grade to six years later, so it provides a good national sample for studying the incidence of dropouts and a long period to examine its antecedents. Our sample includes those students who participated in the NELS:88 first follow-up in tenth grade (1990) and we

examine high school drop out status for them two years later (1992). We use linear regression and logistic analysis to examine these issues. The data for these analyses is weighted, using the appropriate panel weight (F3F1PNWT) to represent 10th graders in 1990 (Haggerty et al, 1996).

VARIABLES

Background Variables

Our background and demographic variables include a continuous scale for socioeconomic status, gender (male as reference group), race (black, Latino, Asian dummy variables, white as the reference group), high school track (college track as dummy variable, vocational and general track as the reference group). School level characteristics are also included: school type (private and catholic school dummy variables, public schools as reference group); region (south, west, and northeast as dummy variables, midwest as reference group); location (urban as dummy variable, suburban and rural as reference group). Tenth grade composite test scores are also included in the base models.

Threats, Social Isolation, Withdrawal, Teacher Disparagement, Dropout

We measure threats with a three variable factor capturing whether respondent has been threatened at school, got into a physical fight, and whether respondent feels safe at school (alpha=.42). Social isolation was captured with a factor containing three variables describing whether or not respondent got along with boys and girls, or whether he or she has any same sex friends (alpha=.81). Withdrawal is an index comprised of many disengagement behaviors, which include self-reported measures of tardiness, cutting class, absences, getting into trouble and completing homework for class (alpha=.66). Teacher disparagement is a single variable measure, representing the degree to which a student agrees that "I often feel put down by teachers in class". Drop-out is a measure constructed at the third NELS follow-up. It is a dummy variable representing whether the student "ever dropped out of HS at least once", with "never dropped out" as the reference category. Appendix B discusses the choice of this variable in detail, and why we believe it is the best measure we can use.

THE MODEL

We use the following model to organize our analysis. Our model takes a path model format, which allows us to examine independent and mediating effects.

BACKGROUND-->ISOLATION, TEACHER DISPARAGE-->THREAT--> WITHDRAWAL, DROPOUT

This model assumes a sequence of causality. While it is not possible to analyze causation, some assumptions in this model are highly plausible because of their timing. The middle variables are measured in tenth grade reports: isolation, teacher disparagement, threats, and withdrawal behaviors. Background attributes are mostly features of individuals that precede their experience in tenth grade, so it is reasonable to expect that they might influence tenth grade attitudes and behaviors if a relationship exists. Similarly, we

consider dropout behaviors after tenth grade, so it is reasonable to expect that dropouts may be affected by tenth grade experiences if a relationship exists.

Among the tenth grade variables, causal order is more difficult, and here we go entirely on our assumptions. However, our empirical analyses can still partly test these assumptions by showing whether variables which we assume to mediate do actually reduce the influence of prior variables on later variables. For instance, we expect that controlling for threats reduces the effects of isolation on withdrawal and dropout behaviors.

Note that because we are studying the dropouts of students who answered the 1990 survey (when most students were in tenth grade, unless they were held back), we do not consider people who dropped out prior to 1990. The survey indicates that only a small proportion of the sample dropped out prior to 1990, and these students are not studied here (664 students dropped out prior to 1990, while 2162 students dropped out after 1990).

HYPOTHESES

Based on the above model, we make the following hypotheses:

1. Background variables influence isolation, threats, withdrawal, teacher disparagement and dropout behaviors.
2. Isolation influences threats, withdrawal and dropout behaviors.
3. Teacher disparagement influences safety, withdrawal and dropout behaviors.
4. Threats mediate the effects of isolation on withdrawal and dropout behaviors.
5. Threats mediate the effects of teacher disparagement on withdrawal and dropout behaviors.

ANALYSIS

I. Descriptive Analyses

To what extent do students feel isolated, threatened, or disparaged by teachers?

Although the majority of students in our sample report that they are socially active and feel safe in their schools, there is a small number of students for whom school is not so inviting and enjoyable. Four percent of the sample report that other students don't think they fit in, while about 9% report having some trouble making own sex friends. Twenty percent report that they feel put down by other students in class, and almost that many (16.5%) report teacher disparagement. Though 8.4% report that they don't feel safe at

school, a substantially higher number of students (23.5%) report that someone threatened to hurt them in school at least once.

Overall, about 22% of the students in our sample ever dropped out of high school (regardless of returning), and 7.3% dropped out and either never went back or never attained an equivalency certificate. These numbers are relatively consistent with other estimates in the literature.

II. Correlational Analyses

In this section we use correlational analyses for background and school characteristics to show which students in our sample are isolated, feel unsafe/threatened, exhibit withdrawal behaviors and experience teacher put down (Table 1).

We find overall, that **social isolation** is most common among low SES, male, black and Latino, low track, and low-test students. Asian students appear to be less isolated, and students in the northeast region appear to be less isolated than the Midwest, though there are no other regional differences. Private school students are less isolated than their public school counterparts, while attending school in an urban setting is positively related to isolation.

We find almost all of the same relationships between background characteristics and **threats**. However, there are no significant relationships between threats and Latino students or students in an urban setting.

We also find that **withdrawal** is most common among male, Latino, low track, and low-test students. Catholic and private school students exhibit these behaviors less often, and attendance in an urban school is positively related to withdrawal behaviors. Students from the west more withdrawal behaviors while students from the south exhibit less. It is interesting to note that *both* black and Asian students exhibit less withdrawal behaviors, despite the fact that black students seem to be more isolated and feel less safe.

We also find that **teacher disparagement** is negatively associated with black and Asian students. Students in the college track report less teacher put down, as do private and catholic school students. Students in urban schools experience less put-down than those in suburban or rural schools.

Finally, Table 1 shows drop out correlates similar to those found in the literature. Low SES, low performing, male, minority student status and urban school attendance are all positively associated with dropout, while college track, private or catholic school students appear less likely to dropout.

III. Multivariate Analyses

Determinants of Threats

A central hypothesis of this study is that threats are an important influence on dropping out and withdrawal behaviors, and may mediate the effects of isolation. In Table 2, Column 1, we examine the background determinants of threats. We find that low SES students, females, Latinos, Asians, and private school students in college track and with high test scores are less often threatened. Students in urban schools also seem to experience more threats. It is noteworthy that black students do not feel unsafe, and unsafe feelings are unrelated to region of the country or urban location.

In addition, pertinent to our hypotheses, we find that *isolated* students are more subject to feeling unsafe in school, even after controls for individual attributes (Table 2, Col 2). We also find that students who experience teacher disparagement are more subject to threats in school, even after controls for individual attributes *and* social isolation (Table 2, Column 3).

Determinants of Withdrawal

Our model also posits that high school dropout decisions are not instantaneous. There are precursor behaviors, behaviors that indicate gradually accumulating social withdrawal from school, which predicts subsequent drop out behavior (Ekstrom et al, 1986; Finn, 1989; Rumberger, 1987). We show that isolated students and disparaged students are more likely to show withdrawal behaviors, even after many controls for background variables and academic achievement.

First, in Table 3, Column 1, we analyze the influence of background characteristics. Because withdrawal behavior is a continuous factor, we perform linear regression analysis. We find that withdrawal behaviors are most common among white, low track, low test score students, and urban students. Private school or Catholic school attendance does not affect withdrawal. Females exhibit less withdrawal behaviors, as do students from the south. Students in the northeast and west show more of these behaviors. It is noteworthy that although Latinos are more prone to withdrawal behaviors in simple correlations (with nothing controlled), these effects disappear after controls for SES and test scores (especially the latter).

Second, in Table 3, Column 2-3, we examine whether isolated students and disparaged students are more likely to exhibit withdrawal behaviors from high school. We find that many individual attributes have effects, similar to those above. However, even after these are controlled, we find that isolated students and disparaged students are significantly more likely to exhibit withdrawal behaviors, and this is even true after controlling for test scores and other background variables. Apparently, withdrawal behaviors are not only due to low achievement, they are also influenced by social isolation and teacher disparagement.

Finally, in Table 3, Column 4, we examine intervening processes, particularly whether threats mediate the relationship between isolation and withdrawal behaviors and between teacher disparagement and withdrawal behaviors. We find that it does so to a large extent, but not completely. After threats are added to the model for explaining withdrawal behaviors, the coefficient for isolation decreases but remains significant.

Moreover, the coefficient for teacher disparagement declines substantially, but it remains a strong and significant influence. We find that teacher disparagement partly influences withdrawal behaviors through its effects on threats, but it also has a separate direct influence. Even after controls for background, academic achievement, isolation, and threats, teacher disparagement significantly affects withdrawal behaviors.

Determinants of Dropout

A great deal of prior research has noted that blacks and Hispanics are much more likely to dropout of high school than whites and that these differences decline or disappear after controlling for socio-economic background and/or achievement test scores. Our analyses find the same results. These results can be most clearly seen in simple comparisons of group means. Table 4 shows the percent of dropouts by test score quartile for each ethnic group.

Looking at the totals for each ethnic group, we see that whites' drop out rate (.15) is much lower than that for Hispanics (.25) and for blacks (.24). However, within each test quartile (except the lowest one), blacks are actually slightly LESS likely to drop out than whites, although the differences are too small to be significant. For instance, in the third test quartile, 10.4% of whites dropped out while 8.3% of blacks do (9.7% for Hispanics). These findings indicate that drop out rates do not differ by ethnicity among students with similar achievement test scores. The findings are in the reverse direction for the lowest test quartile. We might note that the average test scores in each quartile are fairly similar for whites, blacks and Hispanics.

These findings show how the large differences in drop out rates by ethnicity can be explained by the distribution of ethnic groups in test scores. Blacks and Hispanics are more often in the lower test quartiles, so that lower achievement, not ethnicity, may be responsible for their higher drop out rates.

We can extend this analysis by adding other controls in our multivariate analysis. In Table 5, Column 1, we analyze the influence of background characteristics on dropout. Because dropout is a dichotomous outcome, we perform a logistic regression analysis. We find that dropout is most common among low SES, whites, low track, low test score students, as well as public school and urban students. Females are less likely to drop out, and the only regional difference seems to be the higher likelihood of students in the west to dropout. It is noteworthy that although blacks and Latinos are more likely to dropout in simple correlations (with nothing controlled), these effects disappear after controls for SES and test scores (especially the latter), and they actually reverse: Both blacks and Latinos are significantly LESS likely to dropout, after controls for test scores.

Second, in Table 5, Columns 2-3, we examine whether isolated students and disparaged students are more likely to drop out of high school. We find that many individual attributes have effects, similar to those above, and even after controlling for these background variables, isolated students are significantly more likely to dropout. We also find that disparaged students are significantly more likely to drop out, and this is even true after controlling for test scores, other background variables *and* social isolation. Apparently, not only are threats and withdrawal behaviors affected by social isolation and teacher put-down, but ultimately so is dropout.

Next, in Table 5, Column 4, we examine intervening processes, particularly whether threats mediate the relationship between isolation and dropouts and disparagement and dropouts. We find that after threats are added to the model for explaining dropouts, the coefficient for teacher disparagement declines by almost half (but remains significant) and isolation becomes non-significant. That suggests that isolation, per se, is not an influence on dropouts, net of threats. Isolated students are more likely to dropout because they are more subject to threats. If isolated students are not threatened, they are not more likely to drop out.

Moreover, it implies that teacher disparagement affects dropping out partially through threats. We might hope that teachers give more support to students who are threatened. However, we find that rather than *counteracting* peer isolation and threats, teachers *reinforce* them. Students who are disparaged by teachers are more often threatened. When we run linear regression models on safety, we find that even after controls, perceived teacher disparagement is associated with an increased experience of threats (cf. Table 2. Column 3).

Moreover, teacher disparagement further contributes to dropping out. Even after controls for background, academic achievement, isolation, and threats, teacher disparagement significantly affects dropouts.

Finally, in Table 5, Column 5, we add withdrawal behaviors to the logistic model. We find that just as we had assumed, withdrawal behaviors mediate much of the influence of most factors on dropout, including isolation and teacher disparagement, but NOT threats, which retains a strong independent effect.

CONCLUSIONS

As noted at the outset, the causal inference is strong at two points in this model, between background and tenth grade behaviors, and between tenth grade behaviors, and dropping out. Temporal sequence makes the causal inference unlikely to flow in the opposite direction (although of course we cannot rule out the possibility that unmeasured variables may influence both factors).

In contrast, causal inference is weak among tenth grade variables. Yet here, where we find empirical associations, we find interesting and potentially important mediation. We find that threats mediate the isolation and teacher disparagement effects on dropouts.

While the causal inference must be tentative, the mediation strongly implies that these processes affect the same individuals. Isolation seems to have independent effects on threats, but its effects on withdrawal and dropout come from students' subsequent experiences of threats.

Similarly, the fact that teacher disparagement has smaller effects independent of threats suggests that if teacher disparagement affects dropping out, it is only because it is associated with threats. Again, we cannot prove causal direction, but the interrelation of the two processes and the reduced independent influence of teacher disparagement, lead to a strong inference that teacher disparagement has some of its impact through its association with threats. One possible inference is that teacher disparagement of a student tells other students that this student will get less support from teachers. Perhaps teachers' disparagement unintentionally targets some students as potential victims. Alternatively, perhaps some third factor, say student negativity or "bullying", leads both to teacher disparagement and to threats from peers. While we cannot decide among these, it is clear that teachers are not counteracting the effects of threats, as one might hope. We must admit that methodologically, we cannot rule out the possibility that some students see themselves as "victims" and through their distorted perceptions they see both teachers and peers putting them down. However, even if these relationships are only in students' perceptions of teacher disparagement, students' perceptions are clearly important in leading to real behavioral outcomes: both withdrawal behaviors and dropping out of school.

Regardless of such speculations, it is clear that the students who suffer from isolation and threats from peers do not feel supported by teachers. In some cases, perceived teacher disparagement has stronger relationships with these outcomes than peer influences. Further analyses of these issues are clearly warranted. If these findings are replicated, policy actions might be taken to help teachers alter their behaviors toward these students. One way to do this would be to create smaller classes that would allow teachers to deal more carefully with difficult students.

These analyses have not examined the effects of school attributes. From our analyses, it is not clear to what extent these effects are due to the level of threats in schools. To what extent are the effects of threats on dropping out due to being in schools where threats are common, and to what extent are the effects due to individual variation in getting threats in moderately unsafe schools? We have begun to do some initial analyses of school effects measured by administrator's reports but our results are too tentative to report at this time. Our preliminary results do suggest that some of the relationship between individuals' being threatened and their dropping out is not mediated entirely by school differences. If this finding is verified, it suggests that some individuals feel unsafe in schools that are not the most dangerous schools. From a practical viewpoint, policymakers should reduce the danger in highly dangerous schools, in any case, just because danger is undesirable, regardless of its effects—measurable or not. However, this may not be enough to reduce dropping out. It is possible that schools need to address students' individual experiences as well, even in relatively safe schools. Students who are

picked on as victims, and students who often get in fights, may need special assistance in getting away from these threats.

While these analyses have many limitations, they clearly indicate that we must broaden our understanding of drop out behaviors. These results confirm prior research that indicates that dropping out is not a sudden behavior, rather it is strongly predicted by the various indicators of withdrawal that which are evident much earlier than dropping out (Finn, 1989; Miller et al, 1987).

Second, these results, like many others, show effects of background influences on dropout. However, these results indicate that background effects are mediated by social experiences. Indeed, other analyses indicate that these social processes may even work differently for different racial groups.

Third, these results also suggest that dropping out is not merely due to academic failures. Our analyses show that many social processes affect dropping out, independent of academic achievement. Moreover, social processes mediate some of the influence of academics on withdrawal and dropping out. This implies that academic problems may start a chain of social processes that contribute to the drop out outcome. If schools take action to respond to academic difficulties and in turn prevent these detrimental social processes, we may prevent the drop out outcome. In fact, we find a number of cases where high achieving students drop out and low achieving students do not, and these social processes account for some of these outcomes. Contrary to some discussions of the topic, dropping out is not an inevitable consequence of low academic achievement, and social processes may mediate the relationship.

Lastly, if our findings are verified, then some of those social experiences can be prevented—they are not inevitable or invariable. Various reforms may reduce student isolation and threats to student safety. In particular, we suspect that smaller classes might allow teachers to respond more supportively and more regularly, so they are less frequently perceived by students as disparaging (Fine and Somerville, 1998). Small classes might also make frightened students feel safer and make threatening students feel more accountable. Such processes might explain the observed benefits of small schools in reducing drop out behaviors. Overall, we believe that social interactions (and particularly those that lead to violence) play an important part in explaining academic outcomes, and should be an important consideration for guidance counselors and teachers as well as administrators designing drop out prevention programs.

References

- Alexander, K.L., Ackland, B.K. and L.J. Griffin. 1976. "The Wisconsin Model of Socioeconomic Achievement: A Replication." *American Journal of Sociology*, 81: 324-342.
- Bachmann, J.G., Green, S., and I.D. Wirtanen. 1971. *Youth in Transition: Dropping Out—Problem or Symptom?* Ann Arbor: University of Michigan, Institute For Social Research, Vol. 3.
- Bernstein, S. and J.H. Rulo. 1976. "Learning Disabilities and Learning Problems: Their Implications for the Juvenile Justice System." *Juvenile Justice*, 27(4): 43-47.
- Bryk, Anthony S. and Yeow Meng Thum. 1989. "The Effects of High School Organization on Dropping Out: An Exploratory Investigation." *American Education Research Journal*, 26(3): 353-383.
- Coombs, J. and W.W. Cooley. 1986. "Dropouts in High School and After High School." *American Education Research Journal*, 5, 343-364.
- Elliot, D.S. and H.L. Voss. 1974. *Delinquency and Dropout*. Lexington, MA: D.C. Heath and Company.
- Ekstrom, Ruth B., Goertz, Margaret E., Pollack, Judith, and Donald A. Rock. 1986. "Who Drops Out of High School and Why? Findings From a National Study". *Teachers College Record*, 87, 356-373.
- Fine, M. and J.I. Somerville. 1998. *Small Schools, Big Imaginations*. Chicago: Cross City Campaign for Urban School Reform.
- Finn, Jeremy D. 1989. "Withdrawing From School." *Review of Educational Research*, 59(2): 117-142.
- Goldschmidt, Pete and Jia Wang. 1999. "When Can Schools Affect Dropout Behavior? A

Longitudinal Multilevel Analysis." *American Education Research Journal*, 36(4): 715-738.

Gottfredson, Gary D. and Denise C. Gottfredson. 1985. *Schools and Delinquency*.

Cambridge, UK: Cambridge University Press.

Haggerty, Catherine, Dugoni, Bernard, Reed, Laura et al. 1996. NELS:88/94:

Methodology Report, National Center For Education Statistics (Report 96-174), U.S. Department of Education, OERI.

Kaufman, Philip, Chen, Xianglei, Choy, Susan P. et al. 1998. "Indicators of School

Crime and Safety, 1998". National Center For Education Statistics (Report 98-251) and Bureau of Justice Statistics (Report 172215), U.S. Department of Education, OERI and U.S. Department of Justice, Office of Justice Programs.

Lawrence, Richard. 1998. *School Crime and Juvenile Justice*. Cambridge, UK:

Cambridge University Press.

Mann, Dale. 1987. "Can We Help Dropouts?" In Gary Natriello (Ed.), *School Dropouts: Patterns and Policies*. New York: Teachers College Press.

McNeal, Ralph B. 1995. "Extracurricular Activities and High School Dropouts."

Sociology of Education, 68: 62-81.

Newmann, Fred M. 1981. "Reducing Student Alienation in High Schools: Implications of Theory." *Harvard Educational Review*, 51(4): 546-564.

Riehl, Carolyn. 1999. "Labeling and Letting Go: An Organizational Analysis of How

High School Students Are Discharged as Dropouts." Pp. 231-268 in *Research in Sociology of Education and Socialization*, Volume 12, edited by Aaron M. Pallas. New York: JAI Press.

Rumberger, Ghatak et al, 1990

Rumberger, Russell W. 1987. "High School Dropouts: A Review of Issues and

Evidence." *Review of Educational Research*, 57: 101-121.

Rumberger, Russell W. 1983. "Dropping Out of High School: The Influence of Race, Sex, and Family Background." *American Educational Research Journal*, 20, 199-220.

Tinto, Vincent. 1987. *Leaving College*. Chicago: University of Chicago Press.

Toby, Jackson. 1983. "Violence in School." In M. Tonry and N. Morris (Eds.), *Crime and Justice: An Annual Review of Research*. Chicago: University of Chicago Press.

U.S. Department of Education. 1999. *Condition of Education*. Washington, D.C. P.80.

Wehlage, G.G. and R.A.Rutter. 1986. "Dropping Out: How Much Do Schools Contribute to the Problem?" *Teachers College Record*, 87: 374-392.

APPENDIX A: Composite Background Variables and Weight

Socioeconomic Status

Composite variable using father's education level, mother's education level, father and mother's occupation, family income and non-missing household items to create a scale standardized with mean at zero and standard deviation at 1.

First Follow-Up (10th grade) Test Scores

This is a standardized scale of composite math and reading ability, created by NELS for an overall measure of cognitive ability and based on the multiple forms administered to students. It is standardized within year, using the questionnaire weight, to have a mean of 50 and a standard deviation of 10. The reading tests were administered as follow-up questions to reading passages, and the math tests were based on student's exposure to various courses in algebra, geometry, high level mathematics.

F3F1pnlwt

This panel weight applies to sample members who completed questionnaires in 1990, 1992, 1994, regardless of base year status. This allows projections to the population consisting of those who were in the 8th grade in the spring of 1988 or in the 10th grade in spring 1990.

APPENDIX B: High School Dropout Variable

The decision about which dropout measure to use proved much more difficult than one might expect. NELS provides several different types of data on dropout at each wave of data collection—self-report, transcript data, NELS probability calculations of dropout, and type of student questionnaire completed. We investigated the variables constructed by NELS at the third follow-up, which took into consideration sample wave status during the two prior follow-ups and current status to come up with a more comprehensive measure of high school completion status.

We chose F3EVDOST, which indicates whether sample member ever dropped out of high school, regardless of whether they ever returned. If information regarding this status was collected in 1994 (Third Follow-Up) for a sample member, it was used. Otherwise, the two relevant 1992 variables F2TRSTYP (transcript data) and F2EVDOST (other-non-transcript sources) were checked. If either indicated that the sample member ever dropped out, then F3EVDOST was given an affirmative value (1). We chose this variable for our focus because the fact of ever having dropped out indicates that the student has been put at risk for some period of time. Even if the student subsequently returned to school, the student will have difficulty getting caught up academically and socially integrated, and thus will be at greater risk.

To conduct future analyses for those students who dropped out and never returned, we will use F3DIPLOM, which is another Third Follow-Up construct variable that utilized both second and third wave data, as well as transcript information, wave sample status, and questionnaire type to describe student educational attainment. This variable indicates: whether student ever received a HS diploma, equivalent (GED) or certificate; is currently working toward an equivalent; is enrolled in HS at present; or did not graduate, did not obtain an equivalent, and is not working toward one.

APPENDIX C: Data Descriptives

	Minimum	Maximum	Mean	Std. Deviation
SES	-2.97	2.56	-0.13	0.79
Female	0	1	0.51	0.5
Black	0	1	0.11	0.31
Latino	0	1	0.14	0.34
Asian	0	1	0.07	0.25
College Track	0	1	0.34	0.47
Test Score	30.27	71.82	50.52	10.04
Private	0	1	0.12	0.32
Catholic	0	1	0.06	0.24
South	0	1	0.35	0.48
West	0	1	0.21	0.4
Northeast	0	1	0.18	0.39
Urban	0	1	0.28	0.45
Isolation	-0.73	3.89	0	1
Threats	-0.85	4.87	0	1
Withdrawal	-1.54	4.43	0	1
Teacher Disparage	1	4	1.95	0.69
Dropout	0	1	0.19	0.39
Valid Listwise	9009			