Extracurricular Activities and High School Dropouts

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Previous research on high school dropouts has typically examined the relationship between a student's attributes and dropping out, but research on the more "voluntary" or behavioral attributes associated with dropping out of high school has been limited. The findings presented here indicate that participation in certain extracurricular activities (athletics and fine arts) significantly reduces a student's likelihood of dropping out, whereas participation in academic or vocational clubs has no effect. When all activities are examined simultaneously, only athletic participation remains significantly related to dropping out. Furthermore, participation in athletics and in fine arts serve as key intervening variables in the dropout process, magnifying the direct relationships between race, gender, academic ability, and dropping out. These findings persist even after crucial "dropout" forces (such as race, socioeconomic status, and gender) and "pullout forces" (such as employment) are controlled.

An increased probability of subsequent criminal behavior (Thornberry, Moore, and Christenson 1985), lower occupational and economic prospects (Rumberger 1987; Steinberg, Blinde, and Chan 1984), lower lifetime earnings (Catterall 1985; Rumberger 1987; Steinberg et al. 1984), and an increased likelihood of becoming a member of the underclass (Ricketts and Sawhill 1988) accompany dropping out of high school in the United States. Furthermore, dropouts have lower rates of intergenerational mobility (Levin 1972), lower levels of academic skills (Alexander, Natriello, and Pallas 1985; McDill, Natriello, and Pallas 1985), and poorer levels of mental health (Levin 1972; Rumberger 1987) and physical health (Rumberger 1987) than do nondropouts. Macro-level examinations have found that higher dropout rates lead to lower tax revenues and increased expenditures for governmental assistance programs (Catterall 1985; Levin 1972; Rumberger 1987; Steinberg et al. 1984). Rising dropout rates are also associated with foregone national income, increased crime rates, and reduced levels of political and social participation (Catterall 1985; Levin 1972).

Given the severe consequences of dropping out of high school, "Who drops out?" is a question of much interest. Students with low academic ability, from lower social classes, and from racial-ethnic minority groups typically have increased chances of dropping out (see, for example, Ekstrom Goertz, Pollack, and Rock 1986; Frase 1989; Rumberger 1987). Likewise, gender, age, single-parent household structure, and employment while in school are also significantly associated with dropping out of high school (see Cervantes 1965; Ekstrom et al. 1986; Elliott and Voss 1974; Frase 1989).

Although much is known about the individual attributes of dropouts, most research is atheoretical (Holland and Andre 1987). Of the available theoretical paradigms, the social control or social integration perspective is least often chosen. The view that dropping out is determined, in part, by a student's level of integration allows for the student voluntarily to reduce his or her likelihood of dropping out. However, the
danger of this conceptualization is the possibility that the victim is often blamed for a problem whose causes and solutions are not individually based.

Keeping the fact that students drop out of school firmly in mind is one way to curtail this potential problem. To anchor the school to the problem, I operationalized integration as students’ involvement in school-based extracurricular activities. Thus, the research presented here examined whether a student’s participation in school extracurricular activities significantly affects the student’s chances of dropping out. According to this approach, the school, specifically the dynamics operating within the student body, plays a prominent role in the dropout process.

THEORETICAL FRAMEWORK

Although much previous work on dropping out has conceptualized the process via the strain or social learning paradigms, social control-integration theory may also be applicable. Social control theory contends that individuals are naturally inclined to commit deviant acts and that the strength of one’s social bonds to various traditional institutions mediates this tendency; that is, those with stronger social ties are less likely to commit and sustain deviant behavior (Hirschi 1969). According to Hirschi, there are four interwoven components of any social bond: attachment, commitment, involvement, and belief. Attachment specifically refers to attachment to significant others, such as parents and peers; commitment is one’s level of commitment to conventional aspirations and acceptance of the legitimate means of achieving these goals; involvement is one’s level of involvement in conventional activities; belief is whether one believes in the moral validity of the social rules and has accepted these codes of conduct as just and valid.

Involvement is the most salient aspect of the student’s social bond to the school and is analogous to concepts used in other theoretical approaches (see the following discussion on Tinto’s and Finn’s theoretical processes). Involvement is also a more policy-relevant concept (it is more easily altered by an individual or the school or both) than are the remaining three facets of the social bond: attachment to others, commitment to conventional aspirations, and belief in the moral validity of the social rules. Therefore, I examined empirically only the impact of students’ involvement on dropping out of high school.

Although social control theory provides a broad overview within which dropping out of high school can be placed as one specific behavior, it does not explicitly address the intricacies of schools or how to capture empirically the level of involvement. To address these issues, I used school-specific theories of withdrawal and departure. The most elaborate theories of students’ departure contend that a higher level of integration leads to the decreased likelihood of exiting the school environment (Spady 1970, 1971; Tinto 1975, 1987). According to these theories, withdrawal from college is an interactive process whereby a student’s attributes and intentions determine, in part, his or her level and type of integration; integration then further modifies a student’s intentions and alters his or her tendency to leave college. The concept of integration is critical for these theories because the level of integration into an environment determines whether an individual remains with or departs from the group (Tinto 1987; Van Gennep 1960).^2

^1 There are multiple types of integration, including students’ integration in the peer group, family, and school. Hirschi’s (1969) study of juvenile delinquency indicated that the level of student integration in all three institutions has a significant impact on a student’s propensity to engage in delinquent behavior.

^2 Only Tinto’s (1975, 1987) theory is reviewed, since it is a direct extension of Spady’s (1970, 1971) earlier theoretical work.

Social integration is not a concept unique to educators or anthropologists, but has a long sociological history dating back to Durkheim’s (1951) study of suicide. One type of suicide, egoistic, is most likely to occur
Although Tinto's theory adequately explains the college-withdrawal process, it is not directly applicable to my research. First, attending high school is not a voluntary activity to the same extent as is attending college, since many state laws require attendance through a given age. Second, before their departure, most high school dropouts report their intention to attain a higher education (Wagenaar 1987). Third, the forces that cause students to drop out of high school and college are likely to be different.

These three reservations cast doubt on the role of intentions and commitments as critical mechanisms in the process of dropping out of high school. Therefore, a theoretical process that eliminates intentions and commitments as crucial causal mechanisms may be more applicable for explaining high school dropouts.  

Tinto (1987) further separated the school environment into social and academic domains, a seemingly artificial distinction for high schools, since the strongest element of a student's integration is the peer group, or the social domain (Coleman 1961a; Cusick 1973). Most high schools are commuter institutions that provide minimal opportunities for student-faculty interaction outside the formal school environment. What interaction exists generally occurs in formally sanctioned school activities for which faculty members serve as official sponsors. Therefore, my research focused on how integration into a single domain, operationalized as involvement in extracurricular activities, mediates a student's likelihood of dropping out.

Distinguishing between social and academic domains may not be relevant for high school, but the concept of the type of integration is still salient. A student may be integrated into one or more distinct and separate peer groups, proxied by type of participation. Schools generate an internal culture that is dependent on the formation of student groups (see Coleman 1961a, 1961b, 1965; Cusick 1973; Eitzen 1975; Morgan and Alwin 1980), which are partially defined on the basis of school-sanctioned activities (Coleman 1961a, 1965; Cusick 1973; Eitzen 1975; Frederick 1965; Hayes 1930; Morgan and Alwin 1980). Membership in these groups also contributes to personal development and identity formation (Eder 1985; Eder and Parker 1987; Kinney 1993), and students are labeled on the basis of their memberships (Kinney 1993).

Since these social groups tend to gravitate around specific activities, the nature of the activities is important. There is a continuum of activities at the high school level, from highly prized to devalued; athletics is a high-status activity, music is a moderate-status activity, and debate and hobby clubs are low-status activities (Morgan and Alwin 1980). This status ladder results in "jocks" (athletes) having much greater prestige and power than "techies" (students who are members of vocational clubs).

Other studies have confirmed the differential status and power allocated to students via their memberships. Cusick (1973) determined that students in the "power clique" (those who are active in athletics, the student government, and the drama club) have more authority and power within a school than do students who are in other groups or are in no groups (Cusick 1973).  

When an individual is not fully integrated into multiple groups in a society (because of the accompanying normlessness and anomie). This type of suicide was of primary interest to Tinto and is also applicable to this research.

4 It is undeniable that some students want to drop out of high school or are not committed to obtaining a high school diploma. These intentions and motivations are probably affected by circumstances surrounding the students, such as the local labor market conditions and the viability of employment. For this reason, the students' employment status was controlled in the empirical analysis that follows, but the key focus of this research is on the effect of integration (participation in school) on dropping out.

5 In Cusick's (1973) study, some students had so much power that they were able to maintain nominal control over various administrative decisions (whether students were
Extracurricular Activities and Dropouts as well as other researchers (Eder 1985; Eder and Parker 1987), further indicated that more status, prestige, and power are associated with certain groups, especially athletics.

The activities I used similarly ranged from the highly prestigious to the devalued, including athletics, fine arts, academic clubs, and vocational clubs. Athletics is generally the most prestigious extracurricular activity, and the devalued nature of vocational clubs is fairly persistent across schools. The prestige associated with participating in the remaining activities, fine arts and academic clubs, is more ambiguous.

A difficulty arises because debate-drama was a combined category in High School and Beyond (HSB), from which my data were drawn, but these two activities may have different status levels. Therefore, I classified a positive response to this question as participation in both academic (debate) and fine arts (drama) activities. However, other activities (such as music) contribute to a higher-status ranking for fine arts than for academic clubs (subject-matter clubs). Although exact rankings are clearly school dependent, the general pattern is for athletics to be at the forefront, followed by fine arts, academic clubs, and vocational clubs, respectively. Because of this status continuum, I anticipated differential effects, with higher-status activities exhibiting effects of greater magnitude (both directly and as mediating variables) than lower-status activities.

Finn’s (1989) theoretical work linking extracurricular participation to dropping out of high school contended that students engage in school activities at different rates and thus identify with the value of school and the school culture differently. The degree of participation/identification then mediates a student’s likelihood of dropping out. To fit Finn’s theoretical perspective within the social control-integration framework presented here, I viewed participation as a proxy for integration, which mediates a student’s likelihood of dropping out.

Of course, stronger social ties may lead to a host of other benefits, each of which may be separately associated with dropping out. For example, involved students may fail to drop out because of a change in attitudes resulting from increased involvement, a rational decision attributed to a greater number of social ties to their peers, or an overall greater sense of attachment to or investment in school. Although these are viable alternative explanations for the relationship between involvement and dropping out, whether more highly integrated students fail to drop out because of these outcomes is not addressed here. The operative causal mechanism in this research is student integration, or the existence of weakened social ties to the school.

This research differed theoretically from much of the previous work in this area in that integration has been typically operationalized as a continuum along a single dimension. For example, previous research examined either the effect of greater levels of involvement (operationalized as the number of extracurricular activities participated in) on dropping out (McNeal 1993) or limited the examination of the type of involvement to comparisons between athletes and nonathletes (Schafer and Armor 1968; Vaughn 1968). My research extended the conceptualization by recognizing that a student can be integrated into several distinct domains within a single institution (such as the school).

In addition to an almost exclusive focus on athletics, examinations of the role of types of extracurricular activities are usually dated. Furthermore, current fiscal pressures and the high cost of maintaining athletics makes it essential that the holding power of other extracurricular activities be examined. Thus, my research examined the type of student involvement (athletics, fine arts, academic clubs, and vocational clubs) in formal school activities and its impact.

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DATA AND METHODS

Sample

The data in my study were taken from the first wave (1980) of HSB (National Center for Educational Statistics, NCES, 1983a). HSB data were compiled using a multilevel cluster sampling technique, the first level being regions of the country and the next being a probability sample of schools. The final HSB sample included 735 regular public high schools with an oversample of selected subgroups of schools (for example, alternative public, Cuban public, and Black Catholic).

Owing to the focus of educational policy, I restricted the sample to the 735 regular public high schools. I also placed three restrictions on the students to be included; the students must have (1) participated in the study at both the baseline (1980) and first follow-up (1982), (2) taken the battery of achievement tests, and (3) either were still in high school or had dropped out as of 1982 (they could not have graduated early or transferred). These restrictions produced a sample of 17,251 students, which listwise deletion of missing data further reduced by 17 percent to 14,249.

To construct the involvement measures, I determined which activities each student participated in and then summed the results within a broader category, “type” (athletics, fine arts, academic clubs, and vocational clubs) and collapsed them into participation or nonparticipation. These four groupings allowed me to distinguish among activities with different statuses, particularly to separate athletics from other activities. The appendix presents further details regarding the construction of the various activity categories and the independent variables. Table 1 provides the accompanying descriptive statistics. In summary, the “typical” student in this sample was a white female, aged 15 1/2, who was in the general track (as opposed to the academic or vocational track), from a two-parent household, who participated in approximately two activities (one of which was most likely to be athletically oriented), worked approximately three hours per week, and was more likely to graduate than to drop out.

Other points of interest are the relatively high percentages of students from single-parent households (18 percent), in the college preparatory or academic track (34 percent), and in various extracurricular activities (61 percent in athletic activities, 37 percent in fine-arts activities, and approximately 30 percent in academic and vocational activities). That the majority of students participated in the athletic arena is not surprising, since previous research indicated that athletics is a strong social element of secondary school (Coleman 1961a, 1961b; Coleman and Hoffer 1987; Cusick 1973). Likewise, other research (for example, Wirtenberg, Klein, Richardson, and Thomas 1981) reported participation rates in high school athletics in excess of 50 percent. However, it is surprising that such a substantial percentage of students participated in fine-arts activities, academic organizations, and vocational clubs.

On the surface, it appears that the participation rates for various activities were abnormally high. However, according to the HSB documentation and contractor reports, these rates were comparable to those reported for the sample.

Table 1. Descriptive Statistics for Individual Variables (N = 14,249)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
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<td>Socioeconomic status</td>
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<td>Academic ability</td>
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<td>Age</td>
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<td>Athletic participation</td>
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<td>Vocational-club participation</td>
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<tr>
<td>Dropout</td>
<td>7.7</td>
<td></td>
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</table>

* Ln refers to the natural logarithm.
Extracurricular Activities and Dropouts

as a whole (NCES, 1983b). Athletics includes both the athletic and cheerleading categories, in which 53 and 14 percent, respectively, of the students in the original sample participated; thus, depending on the degree of overlap, 53 to 67 percent of the entire sample participated in “athletics” (compared to the 60.8 percent in my sample). The proportion of students participating in the other activities was similarly consistent; the 37 percent participation rate for fine arts, the 32 percent rate for academic clubs, and the 31 percent rate for vocational clubs all fall within the respective ranges determined by examining across the percentages of the component activities.

A final question worth addressing is the representativeness of the sample. The deletion of missing data reduced the original sample by 17 percent, which may have altered the composition of the sample. A quick comparison between means reported in the documentation and those in this sample indicated that the samples appeared to be distributed similarly. However, the similarity of means does not guarantee consistent relationships across samples between the exogenous variables and dropping out. The reduction in a sample may constitute a problem if the data are not missing completely at random (MCAR), thereby altering the relationships between the samples. However, there is no substantive reason to suspect a systematic pattern of missing data, and the reduction in the sample size should pose no problems for statistical inference.

Statistical Procedures

The examination of a dichotomous dependent variable, such as dropping out of high school, within a regression framework introduces additional statistical complexities. The assumptions of a normally distributed disturbance term and homoscedasticity are violated (Agresti 1990; Aldrich and Nelson 1984) making estimates that are derived from ordinary least squares or its counterpart for dichotomous dependent variables, the linear probability model (LPM), inefficient.

One alternative statistical procedure is logistic regression (Agresti 1990; Aldrich and Nelson 1984). This method assumes an underlying continuous variable (log-odds of dropping out) and the value of 0 or 1 is dependent on a critical cutoff point; the log-odds equal \( \log (p/(1-p)) \), where \( p \) stands for the probability of dropping out of high school. Thus, heteroscedasticity and a normally distributed disturbance term are no longer inherently problematic because dropping out is a continuous latent variable. Logistic regression also corrects the logically inconsistent probabilities associated with the LPM.

RESULTS

Baseline Model

The role of students' involvement in the dropout process is examined within a series of logistic regression models. Table 2 presents models of dropping out, ranging from a reduced model to those including measures for participation separately (athletics, fine arts, academic, vocational club) to one including all four types of participation jointly. Model 1 addresses the stability of previous findings and does not include any theoretical linkage to students' involvement.

Previous research found that racial-ethnic minorities and males have greater raw dropout rates than do white females (Ekstrom et al. 1986; Frase 1989; Rumberger 1983; Wehlage and Rutter 1986), but that Blacks are the least likely to drop out compared to Hispanics and Whites once their prior performance on tests is controlled. Similarly, being a language minority (such as Hispanic) (Ekstrom et al. 1986; Frase 1989; Rumberger 1983, 1987; Steinberg et al. 1984), being older than one's peers (Cervantes 1965; Elliott and Voss 1974; Fernandez and Nielsen 1986; Fernandez, Paulsen, and Hirano-Nakanishi 1989), having a lower socioeconomic status (Edelmann 1989; Ekstrom et al. 1986; Frase 1989; Rumberger 1983; Steinberg et al. 1984),

\footnote{For example, mean socioeconomic status (SES) = 0 in the entire public school sample, but \(-.03\) in the reduced sample. Also, mean ability = 50 versus 50.9.}
Table 2. Logistic Regression Coefficients for Various Models of Dropping Out of High School (N = 14,249) (standard errors in parentheses)

<table>
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<th>Model</th>
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<th>4</th>
<th>5</th>
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<td>Fine arts</td>
<td>- .143</td>
<td>- .080</td>
<td>- .080</td>
<td>- .080</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic clubs</td>
<td>- .135*</td>
<td>- .133*</td>
<td>- .135*</td>
<td>- .136*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocational clubs</td>
<td>- .085</td>
<td>- .085</td>
<td>- .085</td>
<td>- .085</td>
<td></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>1098.6</td>
<td>1154.8</td>
<td>1103.7</td>
<td>1102.4</td>
<td>1098.6</td>
<td>1156.1</td>
</tr>
</tbody>
</table>

^ a Ln refers to the natural logarithm.
* p < .05, two-tailed test.

residing in a single-parent household (Ekstrom et al. 1986; Frase 1989; Rumberger 1983, 1987; Steinberg et al. 1984), having low test scores or being in the lowest quartile of academic ability, (Combs and Cooley 1968; Ekstrom et al. 1986), and being in the vocational track (Frase 1989; Pallas 1986) are all associated with the increased likelihood of dropping out.

My study replicated all these findings. On average, Blacks were an estimated 1.9 times and Hispanics were an estimated 1.3 times less likely to drop out than were Whites, once items such as SES and academic ability were controlled. Older students were about twice as likely to drop out as were younger students, when all else in the model was controlled. On average, high SES students were 1.3 times less likely and
those from single-headed households were 1.7 times more likely to drop out than were their corresponding counterparts, when all else was held constant. Finally, students of higher academic ability and those in the academic track were less likely to drop out than were their peers (an estimated 1.8 and 1.9 times, respectively).

More controversial, and conflicting, research has addressed the relationship between the employment of youths and the completion of high school. Dropouts rationally choose work over school for many competing reasons (Bickel 1989; Bickel and Milton 1983; Bickel and Papagiannis 1988; Papagiannis, Bickel, and Fuller 1983), including a desire to obtain the status of adult roles (NCES 1983b; Pallas 1986; Quay and Allen 1982; Rumberger 1983) and a perceived necessity to seek employment because of financial burdens (Rumberger 1987). The controversy arises when the relationship between hours of employment and dropping out of high school is examined.

Dropouts report working more hours per week while they were in school than do high school graduates (Steinberg et al. 1984). D’Amico (1984) found that students who worked more than 20 hours a week were more likely to drop out, and those who worked less than 20 hours a week were less likely to drop out than were students who did not work. Somewhat incompatible results were reported by Barro (1984), who found that working 0–14 hours per week had little effect on a student’s chances of dropping out, whereas working in excess of 15 hours a week was detrimental. Thus, although Barro and D’Amico agreed on the deleterious effects of excessive employment, they disagreed on the “beneficial” aspect of limited exposure to work.

The results for Model 1 indicate that employment is both beneficial and detrimental to a student’s chances of graduating and thus support D’Amico’s (1984) contention. The beneficial effect is curtailed at approximately seven hours of weekly employment; students who worked less than that amount were generally less likely to drop out than were nonworking students. Meanwhile, employment in excess of seven hours was a “pulling-out” factor; that is, the demands of spending time at work quickly led to an increased likelihood of dropping out.

Model 1 has an exceptional fit ($\chi^2 = 1098.6, 12$ df), indicating that the various exogenous variables jointly significantly predict dropping out of high school. This finding was expected, given the strength of the findings of earlier studies that examined the various attributes and their relationships to dropping out. Furthermore, this baseline $\chi^2$ value enabled me to examine the strength of the involvement measures in subsequent models (via a nested $\chi^2$ comparison).

**Single-Activity Model**

The findings of Models 2–5, which assess the role of student involvement individually, indicate that the type of involvement has a differential effect. Participation in athletics is a significant predictor, as indicated by an increase in the model fit $\chi^2$ of 56.2 units (1 df). It leads to an expected decrease in the log-odds of dropping out of .508 units, when all else is held constant; students who participated in athletics were an estimated 1.7 times less likely to drop out than were those who did not participate. This finding replicates previous findings that students who are engaged in athletics have measurably lower dropout rates than do nonparticipants (Coleman 1965; Vaughn 1968).

The other statistically significant finding (Model 3 $\chi^2$ increase of 5.1, 1 df) is that participation in fine arts leads to an expected decrease of .167 units in the log-odds of dropping out; that is, students who participated in fine-arts activities were an estimated 1.2 times less likely to drop out than were nonparticipants, when all else was held constant. This is an apparent anomaly, since previous research (Coleman 1961a, 1965; Morgan and Alwin 1980) contended that the fine-arts element of the extracurriculum is not central to peer culture. Although it does not explicitly offer contradictory evidence, Model 3 seems to indicate that fine-arts activities are relevant to high school students, as
indicated by the statistical significance of the effect.

However, the magnitude of this effect is not much different from the one for academic organizations (see Model 4). Although the finding was not statistically significant, students in academic organizations were an estimated 1.15 times less likely to drop out than were nonparticipants. In fact, with regard to the magnitude of either variable’s effect, the nested $\chi^2$ values were borderline at best, given the large sample size.

Multiple-Participation Model

A further possibility is that students benefit from participating in more than one arena of the school at a time. Model 6 addresses this issue, and the findings indicate that little is gained by including all four activities simultaneously. The only activity that remains significant is athletic participation, whose effect also maintains comparable magnitude. The magnitudes of participation in fine arts and academic clubs are reduced by approximately 50 percent, with neither approaching significance.

Table 3 places these findings into a substantively meaningful framework by listing the probability of dropping out for various “prototypical” individuals and what this estimated probability would be if a student participated in either athletics or fine arts. Athletic participation reduces the magnitude of the probability by approximately 40 percent. For example, the probability of the prototypical person in the sample dropping out is .0487, but if this same person participated in athletics, the estimated probability would be .0299.

The impact of fine-arts participation is not nearly as impressive; the prototypical person’s estimated probability of dropping out is reduced from .0487 to .0415, or only 15 percent. Of course, the “reducing” effect decreases as the base probability increases (because of the nonlinearity of the probability function), with fine-arts participation reducing the probability for the person represented by the last line in Table 3 by approximately 12 percent.

Mediating Variable

An alternative conceptualization of the role of student involvement is that it serves as an intervening mechanism: Although a student attribute may directly increase the probability of dropping out, it may indirectly decrease the probability by increasing the likelihood of athletic participation. Figure 1 is a path analysis depicting the viability of athletic participation as a mediating variable.

Although no tests of statistical significance were performed for indirect effects, it appears that athletic participation may further decrease the probability of dropping out for Blacks, higher SES students, and those enrolled in the academic track because of the greater likelihood that these students would participate in athletics. In addition, being in the vocational track leads to a decreased likelihood of participating in athletics, which may indicate an indirect increase in the likelihood of dropping out. Within this schema, males and Hispanics may also be indirectly less likely to drop out, a finding that contradicts the results in Table 2, which indicated no differences (directly) in the likelihood that males and females or Whites and Hispanics would drop out.

Figure 2 is a path diagram depicting the mediating effect of fine-arts activities. The major differences between Figures 1 and 2 are the newly present indirect effects for academic ability and age and the direct effect for Hispanics. Because of its positive effect on fine arts, higher academic ability may indirectly lead to an expected decrease in the probability of dropping out.
Table 3. Impact of Participation in Athletics and Fine Arts on the Estimated Probability of Dropping Out for Various “Student Profiles”a

<table>
<thead>
<tr>
<th></th>
<th>Nonparticipant</th>
<th>Participant in Athletics</th>
<th>Participant in Fine Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean/modal**</td>
<td>.0487</td>
<td>.0299</td>
<td>.0415</td>
</tr>
<tr>
<td>plus single-parent householdc</td>
<td>.0620</td>
<td>.0510</td>
<td>.0703</td>
</tr>
<tr>
<td>plus age (1 year older)</td>
<td>.1550</td>
<td>.0994</td>
<td>.1344</td>
</tr>
<tr>
<td>plus ability (1 SD lower)</td>
<td>.2473</td>
<td>.1651</td>
<td>.2176</td>
</tr>
</tbody>
</table>

a The probabilities are calculated from the baseline model (Table 2, Model 1) using \( p(Y = 1) = \frac{e^{\beta_0}}{1 + e^{\beta_0}} \). To determine the impact of athletics and fine-arts participation, the shift in the log-odds associated with each activity was utilized from Table 2, Model 2, and Table 2, Model 3, respectively.

b The mean/modal line is the estimated probability of dropping out for the “prototypical” person in the sample: White female, 15½ years old, average SES and academic ability, from a two-parent household, enrolled in the general track, and employed approximately 2.5 hours per week.

c The probabilities are nested and include all attributes listed prior to the newest inclusion. For example, plus age would be the estimated probability for the prototypical person (calculated using the mean and model values) with the exception that she is from a single-headed household and is one year older than the mean.

log-odds of dropping out. Similarly, older students may be less likely to drop out because of their greater participation in fine-arts activities. Once again, however, the magnitude of the indirect effect is not pronounced (as was the magnitude of the direct effect for fine arts), with resulting odds of approximately 1 (or equiprobability).

To gauge the potential impact of the indirect effect, the reader should consult Table 4, which lists the relative proportion of the total effect attributable to the indirect effect in Panel 1 and the magnitudes of the direct and indirect effects in Panel 2. It should be noted that no tests of statistical significance were performed for the indirect or total effects presented in this table. Therefore, the table is best viewed as an approximation of the potential impact of the indirect effects relative to the direct effects.

Participation in athletics appears to have a fairly substantial impact as a mediating variable. The indirect effect via this participation accounts for 28.9 percent of the total effect for Blacks; 36.9 percent, for Hispanics; 96.4 percent, for males; 34.6 percent, for SES; and 21.5 percent, for assignment to the academic track. No proportions are given for the vocational track because the direct and indirect effects are in opposite directions, with the indirect effect eliminating the direct effect (see Panel 2). Although the magnitude of the effects is promising for athletics, there is less optimism for fine-arts participation. The effect of greatest relative magnitude is for Blacks, with the indirect proportion accounting for 13.2 percent of the total effect. The only other indirect effects of potential importance are for those variables in which the indirect effects are of a different direction than the direct effects: male, age, vocational-track placement, and employment. However, only in one circumstance—gender—is the magnitude apparently meaningful, with the indirect effect being twice the magnitude of the direct effect. Although this finding seems impressive, keep in mind that some of the proportions in Table 4 (including that of gender) are tentative because of the variables’ lack of a statistically significant direct effect on dropping out.

DISCUSSION

Previous research (such as Gardner and Shoemaker 1989; Hirschi 1969; Krohn and Massey 1980; Shoemaker 1984) that used the social control or integrationist perspective recognized the importance of various institutions in the processes of deviant or delinquent behavior, but typically did not address the importance of a close examination of the
Figure 1: Effects of Exogenous Variables on the Log-Odds of Dropping Out via Participation in Athletics

Only direct paths significant at p<.05 are shown.
FIGURE 2. The Effects of Variables on the Log-Odds of Dropping Out via Participation in Fine Arts

Socioeconomic Status (1 SD shift) → Fine Arts Activities
- .273

Academic Ability (1 SD shift) → Fine Arts Activities
- .574

Black → Fine Arts Activities
- .800

Hispanic → Fine Arts Activities
- .219

Gender (Male) → Fine Arts Activities
- .219

Age → Fine Arts Activities
.062

Single Headed Household → Fine Arts Activities
.721

Academic Track Placement → Fine Arts Activities
.157

Vocational Track Placement → Fine Arts Activities
- .133

Academic Track Placement → Dropping Out
- .629

Log Hours → Dropping Out
1.247

Log Hours Squared (Shift From 0-20 hrs)

Only direct paths significant at p(.05 are shown.
Table 4. Relative and Absolute Direct and Indirect Effects Via Athletics and Fine-Arts Participation (calculated from Figures 1 and 2) \( (N = 14,249) \)^a

<table>
<thead>
<tr>
<th></th>
<th>Athletics</th>
<th>Fine Arts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Indirect</td>
</tr>
<tr>
<td><strong>Relative Effects</strong>^b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>.711</td>
<td>.289</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.631</td>
<td>.369</td>
</tr>
<tr>
<td>Other</td>
<td>.931</td>
<td>.069</td>
</tr>
<tr>
<td>Male</td>
<td>.036</td>
<td>.964</td>
</tr>
<tr>
<td>Age</td>
<td>.963</td>
<td>.037</td>
</tr>
<tr>
<td>SES (1 SD)</td>
<td>.654</td>
<td>.346</td>
</tr>
<tr>
<td>Single-headed household</td>
<td>.925</td>
<td>.075</td>
</tr>
<tr>
<td>Ability (1 SD)</td>
<td>.991</td>
<td>.900</td>
</tr>
<tr>
<td>Academic track</td>
<td>.785</td>
<td>.215</td>
</tr>
<tr>
<td>Vocational track</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Hours worked (0-20)</td>
<td>.907</td>
<td>.093</td>
</tr>
<tr>
<td><strong>Absolute Effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>-.539</td>
<td>-.219</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.183</td>
<td>-.107</td>
</tr>
<tr>
<td>Other</td>
<td>.323</td>
<td>.024</td>
</tr>
<tr>
<td>Male</td>
<td>-.007</td>
<td>-.187</td>
</tr>
<tr>
<td>Age</td>
<td>.711</td>
<td>.027</td>
</tr>
<tr>
<td>SES (1 SD)</td>
<td>-.244</td>
<td>-.129</td>
</tr>
<tr>
<td>Single-headed household</td>
<td>.555</td>
<td>.045</td>
</tr>
<tr>
<td>Ability (1 SD)</td>
<td>-.574</td>
<td>-.005</td>
</tr>
<tr>
<td>Academic track</td>
<td>-.607</td>
<td>-.166</td>
</tr>
<tr>
<td>Vocational track</td>
<td>-.103^c</td>
<td>.115^c</td>
</tr>
<tr>
<td>Hours worked (0-20)</td>
<td>.429</td>
<td>.044</td>
</tr>
</tbody>
</table>

^a Effects are listed regardless of statistical significance. For significance of direct effects, refer to Figures 1 and 2; no tests of statistical significance were conducted for indirect effects. In addition, no proportions were calculated for the relative effects when the direct and indirect effects were in opposite directions.

^b Relative effects are the proportion of the total effect attributed to the direct and indirect effects, respectively.

^c Bold face indicates that the direct and indirect effects are in opposite directions.

Integration into the school's various arenas differentially effects dropping out. Participating in the athletic arena significantly reduces the student's likelihood of dropping out, whereas participation in the academic and vocational spheres does not. In addition, the impact of participation in the fine-arts arena may individually effect dropping out. Finally, when different arenas are examined jointly, only athletic participation retains its significance.

The results further indicate that participation mediates the exogenous variables' direct effects on dropping out (by serving as an intervening variable). However, the results once again display little consistency, with the intervening effect varying, depending on the type of student involvement used.

Given the differential impact (or lack of impact) of type of activity on dropping out, the uniqueness of each activity should be addressed. Previous studies (see, for example, Morgan and Alwin 1980) found that of all extracurricular activities, athletics persistently has the highest levels of status and prestige. Although the traits that are taught in the athletic arena generally support individualism and competitiveness (see Cusick 1973; Eder and Parker 1987), the activity's prominence in the school and peer culture clearly serves to keep students in school.

However, what can account for the pseudo-prominent role of fine-arts activ-
Extracurricular Activities and Dropouts

ities in the dropout process? Research (see, for example, DiMaggio 1982) indicates that the fine-arts activities are one mode of attaining cultural capital and thereby gaining access to the more “elite” stratum of the population. It may be that gaining entrance to this sphere exposes the students to peers who have better attitudes toward school, similar to a contagion effect.

It may also be that acquiring the skills and knowledge that fine-arts activities have to offer in some way reduces the student’s likelihood of dropping out. For example, fine-arts activities instill a less competitive focus in participants and foster a more “cooperative” environment. Therefore, although these activities are not as prominent as are athletic activities, the values taught via fine arts may be more conducive to completing school.

The answer to why some activities have a substantial impact while others do not may be simpler than the instilling of pro-school values, the transmission of cultural capital, or the development of a more cooperative and less competitive environment. Specifically, there are several ways in which a selection bias may affect the results presented here.

First, students who are less inclined to drop out to begin with may choose to engage in fine-arts activities. Self-selection is one of the often-used explanations for findings similar to those presented here, but may not be totally applicable. If self-selection is one of the predominant factors explaining the relationship between extracurricular participation and dropping out, should not participation in academic clubs also be significantly related to dropping out? After all, students use participation in academic activities to gain access either to cultural capital or to college entrance, as they do participation in fine arts.

Second, using extracurricular activities as mediating variables helps alleviate some of the self-selection problem because the impact of the exogenous variables on participation is controlled; in other words, the path analysis includes the effect of certain students being more likely or less likely to participate in extracurricular activities.

For example, although findings show that higher SES students, Blacks, and Hispanics are more likely to participate in fine-arts activities and are less likely to drop out, there is no significant relationship between other major predictors of dropout (such as age, single-headed household structure, and employment) and participation in fine arts. All these attributes are variables that may lead students to select the activities. Older students have a lesser ability to be socialized into a significant group of peers, which should decrease their likelihood of being involved in the informal peer group and school culture (see Cervantes 1965; Elliott and Voss 1974; Fernandez and Nielsen 1986; Fernandez et al. 1989; Nielsen 1986). Likewise, students from single-headed households should have less time to devote to extracurricular activities (because of expected higher levels of family and financial commitment), yet the relationship to fine-arts participation is nonsignificant.

Another weakness of past research was its failure to control for the potential effect of students’ employment. The lives of adolescents are defined predominantly in three dimensions: family, peers, and work (Greenberger and Steinberg 1989). Many previous findings that linked students’ involvement to dropping out may have been undermined by the contention that students’ employment leads to both reduced involvement and a higher likelihood of dropping out (omitted variable bias). Thus, my research controlled for this potential confounding variable by including the amount of time a student invested in employment in the estimated models.

After using these control variables, I found that the relationships between type of involvement and dropping out persisted. With regard to the impact of fine-arts participation, the substantive magnitude is small enough that it may diminish as a result of a student’s self-selection into the activities. However, the magnitude of the effect of participation in athletics would make such an explanation harder to maintain.

Yet another possible explanation is that psychological or psychosocial attributes explain many of the established
effects. For example, students' desire or need to be "involved" may drive much of the effect; that is, the need to be part of a group or community may lead students to participate in activities and persist in school. The causal inferences that were drawn earlier are susceptible to this type of omitted-variable, or self-selection argument. However, this explanation again may be more valid for fine-arts activities than for participation in athletics because more sociopsychological attributes may eliminate the significance of participation in fine arts (as did participation in athletics when both were entered jointly), but may serve only to diminish the impact of participation in athletics.

Finally, there is the possibility that the exhibited effects are not evidenced because of any of the previous explanations, but are related to the type and duration of an activity's meetings. Thus, participation in athletics may not instill more proschool values, convey SES and cultural capital, or serve as a gateway to college admission, but may be more integrating because of frequent interaction with peers and a more time-intensive commitment; after all, an activity cannot be integrating if it meets only irregularly and infrequently. In fact, when the individual-effect models (Table 2) are examined from the largest substantive magnitude to the smallest, the effects roughly correspond to what may be thought of as the most time-intensive to the least time-intensive activities (athletics, fine arts, academic organizations, and vocational activities).

Regardless of which exact combination of explanations is used, the pattern of findings leads to a host of implications for past and future research. Most research has used athletics as a proxy for all extracurricular activities. The findings presented here show that participation in athletics has the largest impact, both directly and as an intervening variable. However, the marginal impact of fine-arts participation and the nonsignificant effects of other types of activities cast doubt on the use of athletics as a sole measure of students' integration. In limited circumstances, the effects of participation in athletics and in fine arts as intervening variables are even conflicting. At best, using athletic participation as a sole proxy may lead to an overly optimistic or pessimistic view of the effect of extracurricular activities on various outcomes.

For example, previous research found that students who participate in extracurricular activities tend to have higher levels of achievement (Camp 1990; Eidsmore 1964; Haensly, Lupkowski, and Edlin 1986; Sweet 1986). However, the majority of these studies either viewed involvement as a continuum or used athletics as the sole proxy. It is conceivable that integration into different activities may have effects of different magnitudes on academic achievement, similar to those found for dropping out.

Conflicting direct and intervening effects, similar to those presented here, also lead to potential theoretical complications for social control or integrationist theories of human behavior. The complex nature of schools and peer groups precludes simple theoretical conceptualizations of the dropout process. Future research utilizing the social control or integrationist perspectives must more fully consider the complexity of the institutions to which the individuals are bound. Most institutions are more complex than previous research allowed for, which makes single-dimension conceptualizations inappropriate.

Finally, these findings have repercussions far wider than for educational research. Many researchers (such as Krohn and Massey 1980; Matsueda 1982; Shoemaker 1984) have examined the effect of integration on delinquent or deviant behavior, and some (for example, Matsueda) have concluded that it is relatively weak in comparison to differential association theory. Furthermore, in most of the studies that have examined the effect of integration on a multitude of other behaviors, including suicide, crime, and the completion of college, the complexity of the various institutions was not fully accounted for, which may have led to a clouded or erroneous picture of the true impact of integration and an incomplete test of social control theory.

The findings presented here indicate
that integration into multiple domains of single institutions and the possibility of differential effects arising from these domains should be taken into account. Exactly how conceptualizing these institutions as more complex entities will change researchers' understanding of the impact of integration on delinquent or deviant behavior remains to be seen.

Of course, it will be necessary to find more complete sources of data to pursue these topics adequately. In specific, future research on the impact of participation in various types of activities on dropping out should examine some of the competing explanations discussed here, including the time spent in activities, the psychosocial attributes of the students, the roles the students play in the activities (officeholders or members), and the students' predisposition to participate (whether the students participated in extracurricular activities in middle school). These types of characteristics will not only allow for a more thorough examination of differential integration and its effect on student outcomes, but will provide a better picture of what actually occurs within each of these various arenas. A fuller pursuit of this research agenda and the establishment of the specifics of why extracurricular participation has an impact deserve attention from the research community, but have been rarely addressed because of the weaknesses of available sources of data.

APPENDIX
CONSTRUCTION AND CLASSIFICATION OF VARIABLES

Categorization of the Dependent Variable

Dropout is a dummy variable indicating whether the student had dropped out of high school as of the spring of his or her senior year, 1982. This classification was assigned by the National Opinion Research Center at the time of the first follow-up.

There are several well-documented methodological and measurement problems accompanying the dropout variable in HSB (Bryk and Thum 1989; Ekstrom et al. 1986; Frase 1989; Pallas 1986). First, the status of the student was determined between the 10th and the 12th grades; since it is speculated that a significant number of students leave school before Grade 10 (estimates range from 10 to 20 percent (Frase 1989; Pallas 1986), this research was limited to a somewhat select subgroup of all dropouts. Strictly speaking, this is not a problem, since my research focused on high school dropouts and the impact of students' integration into the high school environment; thus, those students who never experienced high school should not be included in this analysis.

Other problems include students who did not attend school at the follow-up period but who eventually returned to obtain their diplomas (see Pallas 1986 for a discussion of the various paths to attaining a high school diploma) and students who were classified as nondropouts but who failed to graduate. Although the dropout measure was taken in the spring of the student's senior year, a portion of those classified as being in school did not graduate because they failed their course work and chose not to return the following year. These three groups of students (dropouts before Grade 10, returnees, and in-school students who later drop out) were simply not captured in this study. Even with these measurement and methodological problems, HSB and the accompanying measurement of school status are still the best sources of data for studying early school departure on the national level (Frase 1989; Pallas 1986).

Categorization of Independent Variables

Black is a dummy variable coded 1 for all students who indicated that they were non-Hispanic Black on the racial classification question. On this question, coding was such that ethnicity was primary. Therefore, any student who indicated that his or her race-ethnicity was Hispanic was so classified. Hispanic is a dummy variable indicating whether a student is Hispanic, regardless of skin color. Therefore, this category includes both Hispanic Blacks and Whites. Other is a dummy variable coded 1 for all individuals who were neither non-Hispanic White, non-Hispanic Black, nor Hispanic. As with Black, ethnicity was primary (any individual who indicated that his or her ethnicity was Hispanic was so classified).

Male is a dummy variable coded 1 for all students who indicated they were male on the gender question. Age is the age of the student at the time the questionnaire was administered (the spring of the sophomore year). Socioeconomic status was obtained directly from the HSB data set (BYSES) and has
five components: father’s occupation, father’s education, mother’s education, family income, and a household possession index. This variable is standardized in the original data base with a mean of 0, but has a mean of −.03 in this subsample. It ranges from approximately −1.7 to +1.0.

Single-headed household is a dummy variable indicating whether the student resided with only one parent. The single parent could be a natural parent or a stepparent and could either be male or female. Thus, this category includes four possible household arrangements: natural father only, stepfather only, natural mother only, stepmother only.

Academic ability is a composite measure obtained directly from the HSB data set (BYTEST) and is an average of the reading, vocabulary, and mathematics scores (standardized to a mean of 50 and a standard deviation of 10). After listwise deletion and various sample restrictions discussed in the text, the data for this analysis showed a slightly higher mean (50.9) and smaller standard deviation (8.7).

Academic track is a dummy variable coded 1 for all students who indicated “academic or college preparatory” when asked the following question: Which of the following best describes your present high school program?

Vocational track is a dummy variable coded 1 for all students who indicated “vocational (occupational) preparation” when asked the following question: Which of the following best describes your present high school program?

Employment is the number of hours a student spent working for pay in the previous week, not counting work around the house. I used the Ln of [hours worked] in the analyses because the original distribution is heavily skewed. For the curvilinear effect, the quantity [Ln(hours worked)] is squared.

Type of involvement is the type of extracurricular activities that the student participated in during his or her sophomore year. It is a proxy for various degrees of holding power that each activity possesses. Dichotomous variables indicate the student’s participation (1) or non participation (0) in various types of activities: (1) academic subject matter clubs and/or debate, drama), (2) fine arts (band, orchestra and/or chorus, dance and/or debate, drama), (3) athletics and supporting activities (athletic teams and/or cheerleading, pep club, majorettes), and (4) vocational (vocational education clubs, including Future Homemakers, Teachers, Farmers, Business Leaders of America and hobby clubs, such as photography, model building, hot rod, electronics, and crafts).

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