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DISSERTATION

EMPIRICAL EVIDENCE FOR A SPECIFIC TYPOLOGY OF HIGH SCHOOL DROPOUTS

Submitted by

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In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

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Fort Collins, Colorado

Spring 2002

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY SCOTT C. BATES ENTITLED EMPIRICAL EVIDENCE FOR A SPECIFIC TYPOLOGY OF HIGH SCHOOL DROPOUTS BE ACCEPTED AS FULLFILING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN PSYCHOLOGY.

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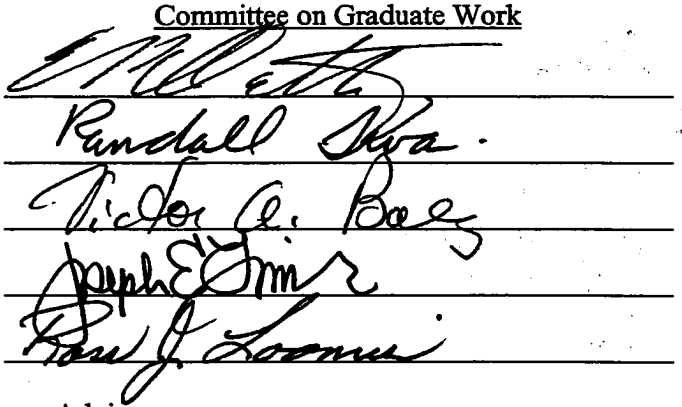

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ABSTRACT OF DISSERTATION

EMPIRICAL EVIDENCE FOR A SPECIFIC TYPOLOGY OF

HIGH SCHOOL DROPOUTS

Most studies of the high school dropout phenomena classify participants into two broad categories: those who finished high school and those who did not. The primary hypothesis of this research is that four distinct, homogeneous, sub-types of high school dropouts exist: a delinquent type, a troubled type, an actively phased-out type. Thus, one of the primary contentions of this research is that the simple classifications system used by most researchers is insufficient. Analysis included cluster analysis to uncover statistically determined groupings based on four factors derived from confirmatory factor analyses. Factors included Psychological Adjustment, General Delinquency, School Performance, and School Bonding. Analyses revealed a five-cluster solution within which two delinquent type dropout clusters were identified, along with a troubled cluster, and an actively phased-out cluster. Thus evidence for three of the four proposed types of high school dropout was revealed. Implications for prevention efforts, intervention efforts, and future research into the dropout phenomena are examined and discussed.

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This project could not have been completed without the (at-times) careful cajoling of my committee, my family, and my friends. I am truly grateful for everyone's support.

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Mela, te amo; you and María Luisa are my raison d'être.

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Introduction

The aim of this paper is to present a course of research regarding high school dropouts. The primary hypothesis of this research is that four distinct and homogeneous sub-types of high school dropouts exist. While more detail and justification is included, a general description of each proposed type of dropout follows:

Delinquent Type. High levels of delinquent behavior such as alcohol and drug involvement, minor and major crime, and gang involvement identify this sub-type of high school dropout. These dropouts have a history of expulsion and various other school-disciplinary problems in addition to a history of contact with the legal system. Often, they will be out of school because they were expelled from the school system.

Actively Phased-Out (Alienated) Type. This sub-type of dropout is identified by feelings of extreme alienation from schools, teachers and the education system. They are the students that Fine and Rosenberg (1983) would refer to as pushed-out or thrown-out—they are adolescents for whom the school system has not provided opportunities that the students need. These dropouts can be distinguished from the passively phased out type by their active dissatisfaction with the school system at several levels and, probably, more encounters with the school system's disciplinary system (i.e. higher expulsion rates).

Passively Phased-Out Type. This sub-type of dropout is identified by diminished academic skills and disruption in the traditional life-course. Adolescents of this type

include those who do not possess the academic skills necessary to complete school. They come from a variety of backgrounds and their deficiencies in academic skills probably developed from a variety of sources. In fact, they may be learning disabled or have academic needs that were not met early in their lives. Regardless, they are not particularly delinquent and may not be extremely alienated from the school system as much as uninterested and detached from it. These are adolescents who eventually develop the belief that school has no benefit to them personally. Often, these are capable students who (a) seek work, and/or (b) have familial responsibilities that are deemed more important than school.

Troubled Type. Significant levels of psychological distress identify this sub-type of dropout. These are youth who eventually decide that school is "too m
have academic skills that rival those of adolescents who complete their high school education. They may even report that they like school. But they have life experiences that are not conducive to educational attainment. As emotional distress is the primary characteristic of this sub-group, these school dropouts are more likely to have histories of abuse and/or neglect.

To orient the reader, the prevalence of the dropout problem, as well as a variety of its known consequences will be discussed. Then, justification of the project will be presented in a series of arguments that homogeneous subgroups of high school dropouts do exist. Next, empirical evidence will be cited that suggests that four specific and distinct types of high school dropouts, summarized above, do indeed exist and need to be considered in research into the dropout problem. Finally, an outline for research is

presented that will generate data that can be used to evaluate the major thesis contained , that distinct types of dropouts exist.

Prevalence of Dropping Out

The simple question, "How many high school dropouts are there?" does not have a simple answer. Both the question and the answer are confounded with definitional, data collection and reporting problems and inconsistencies (LeCompte & Goebel, 1987). For instance, there are a variety of different "dropout rates": status, event, and cohort rates are all tracked by the U.S. federal government's Department of Education. Each of these rates estimates the prevalence of the phenomena in a different way because each rate summarizes a different sub-group of adolescents.

The *event dropout rate* indicates the proportion of students who leave school within a specific year. While this rate is reflective of adolescents who leave a school system officially, it does not account for adolescents who fade-out rather than dropout; those who simply don't return to school after the summer. While the event dropout rate is useful information in that it can provide a school a good accounting of its performance with the students it matriculates, it does not accurately capture all people who have left school.

The *status dropout rate* indicates the proportion of adolescents within a specific age range who are not currently enrolled. This rate includes those people who have not attended school for a specific amount of time. Generally, the status dropout rate includes all school-age people who are not currently enrolled, regardless of when they last attended school; some adolescents leave school before the 8th grade and would not be counted in the *event dropout rate* but would be included in the *status dropout rate*.

Finally, a *cohort dropout rate* is always based on a longitudinal study (e.g. National Educational Longitudinal Study: 1988) that follows a particular group of adolescents over time. While longitudinal studies usually provide more detailed information about the population that they track, the results are not designed to be generalizable to the student population as a whole. Consequently, they are not good measures of the dropout phenomena as a whole.

Table 1 summarizes two indices of the dropout phenomena disaggregated by sex and ethnicity.

Table 1

Status and Event Dropout Rates by Sex and Ethnicity for 1998

Characteristic	Status Dropout Rate %	Event Dropout Rate %
Total	11.8	4.6
Sex		
Male	13.3	4.6
Female	10.3	4.9
Race/Ethnicity		
White, non-Hispanic	7.7	3.9
Black, non-Hispanic	13.8	5.2
Hispanic	29.5	9.4

Note. Source: U. S. Department of Education, 1999

The status dropout rate is an often-used measure of the general phenomena because it is an estimation of all adolescents who are not currently in school. However, as outlined above, it is a particular snapshot of the problem, not necessarily a complete

picture. The U.S. Department of Education estimates that the national status dropout rate in 1998 was 11.8%; thus, 11.8% of 16- to 24-year-olds were no longer in school. This rate has remained stable throughout the 1990s, although a gradual decline over the last 30 years is evident (U.S. Department of Education, 1999). The event dropout rate has also remained stable in the 1990s.

Examining the status dropout rate by ethnicity, however, reveals more varied results. The 1998 status dropout rate for white non-Hispanic adolescents was 7.7%. The 1998 status dropout rate for black non-Hispanic adolescents was 13.3%. The 1998 status dropout rate for Hispanics was 29.5%, a rate that is more than twice that of White adolescents even when recent immigration is taken into account (U.S. Department of Education, 1999). Specific ethnic sub-populations can also vary greatly. The status dropout rate for Mexican-American adolescents, for instance, has been estimated to be as high as 45% (Chavez, Edwards and Oetting, 1989) and Coladarci (1983) reported that in many American Indian schools, a status dropout rate of 60% was not uncommon.

A meaningful and significant number of adolescents exit the education system prematurely. It is also clear that some sub-groups, the economically disadvantaged, the socially disadvantaged, or both, leave school at a higher rate than others.

Consequences of Dropping Out

Education is an important part of social and economic achievement and stability. There is variety of economic, cognitive, psychological, and social consequences associated with not finishing high school.

The most obvious consequences of dropping out of school are economic. Two years after expected graduation the 1993 median income of employed high school

dropouts was 76.0% that of employed high school graduates from the same cohort (U.S. Department of Education, 1996). This trend extends to the entire labor force; those without high school diplomas earn 58.3% of what those with a high school degree, or equivalent, earn (U.S. Bureau of the Census, 1996).

To be certain, this disparity in income can be partially attributed to employment and unemployment rates. But obtaining a high school degree directly impacts employment prospects. McCaul, Donaldson, Coladarci and Davis (1992) found a positive relationship between the numbers of jobs, days of unemployment, and educational attainment in their analyses of High School and Beyond (HS&B) data. That is, high school dropouts had more jobs and longer stints of unemployment than graduates. In 1995, the U. S. Department of Commerce reported similar findings. They found that 1.1% of 8th graders who graduated from high school indicated that they were unemployed 6 years after graduation, whereas, 7.5% of high school dropouts from the same cohort reported being unemployed. Finally, when one considers all people in the labor force, 12.1% of high school graduates were unemployed in 1993 while 20.4% of high school dropouts were unemployed (U.S. Department of Commerce, 1995).

The relationship between early school departure and cognitive abilities has also been studied (Alexander, Natriello & Pallas, 1985; Ekstrom, Goertz, Pollack & Rock, 1986). Alexander, et al (1985) studied data from the HS&B longitudinal study and showed that dropping out of school, even after controlling for social background, prior academic performance and psychological adjustment, negatively affects performance on achievement tests. Data for the HS&B study was collected in 1980 (time 1) and followed up in 1982 (time 2). At time 1, data were collected from close to 30,000 high school

sophomores; approximately 22,000 participants were re-contacted for time 2 data collection. Alexander et al (1985) analyzed the performance of high school dropouts versus high school graduates on a variety of achievement tests (vocabulary, math, reading, science, writing and civics education). As would be expected, they found that staying in school had a profound impact on test score achievement: "schooling...plays an important role in fostering cognitive growth" (p. 420). This was true even when scores at time 1 were accounted for. Alexander et al (1985) also found an important ethnic difference. In terms of achievement test scores, African-American adolescents benefited more than White-American adolescents did by staying in school. That is, the difference between African-American graduates and non-graduates was greater than the difference between White-American graduates and non-graduates. Given that the dropout rate is higher for African-American adolescents, it is important to note that the consequences experienced by these groups may also be more severe.

Ekstrom, Goertz, Pollack and Rock (1986) also analyzed achievement test score data from the HS&B and report that across the sexes and ethnic groups, various levels of completion/non-completion of high school were associated with achievement as measured by standardized tests. When comparing test scores of early dropouts (those who left before the end of their junior year), late dropouts (those who left school their senior year), and people who completed school, they found that leaving school had a negative impact on standardized test scores including those measuring vocabulary, reading, math, science and writing. Again, similar to the analyses conducted by Alexander et al (1985), these differences were intensified for women and ethnic minority students. That is, the difference in achievement test scores between female or ethnic minority adolescents who

did not complete high school and those who did was greater than the difference in achievement test scores for whites or males who did not complete school and those who did. From these studies it can be inferred that in terms of performance on achievement tests, educational attainment is most advantageous to girls and ethnic minority students. Correspondingly, it can be inferred that lack of educational attainment has the greatest negative impact on girls and ethnic minority students.

In addition to the economic and cognitive consequences, leaving school early may also negatively impact mental health. Deficits in psychological functioning, as defined by a wide range of mental health variables, have been investigated as possible consequences of dropping out. Kaplan, Damphousse and Kaplan (1994) examined the effects of leaving school early on psychological functioning, defined as anxiety, depression, cognitive disorientation and self-derogation. They followed a sample of 7th grade students for 8 to 10 years. They found that, even while controlling for sex, ethnicity, socioeconomic status, and psychological functioning in the 7th grade, there was a statistically significant negative relationship between dropping out of school and psychological functioning 10 years later. That is, dropouts experienced higher levels of anxiety, depression, and cognitive disorientation than did non-dropouts. These authors concluded, "...psychological dysfunction may justifiably be added to economic and cognitive consequences on the list of negative outcomes of not graduating from high school" (pp. 121).

McCaul, Donaldson, Coladarci, and Davis (1992) studied a wide range of social consequences of dropping out of high school and found a variety of differences. McCaul et al (1992) analyzed the HS&B data. In this large-scale, longitudinal, study over 30,000

sophomores from over 1,000 high schools were surveyed in the spring of 1980. They were followed up in two-year intervals through 1986. Approximately 800 students who had dropped out participated in data collection in all three waves (1982, 1984, 1986). McCaul et al (1992) developed a set of political/social participation scales whereby study participants who were identified as dropouts were compared to those who had completed their high school education. They found that dropouts, as compared to high school graduates who did not go on to post-secondary education, vote less, attend church less often, were involved in fewer "political discussions," use alcohol more, and experience more periods of unemployment. In summary, McCaul et al (1992) uncovered wide-ranging social implications of not graduating from high school.

Clearly, there is evidence that completing high school can have a dramatic impact on economic, cognitive, psychological, and social aspects of adulthood. While it is certainly true that education does not guarantee success or positive outcomes in these areas, the deck is surely stacked in favor of the educated.

Justification for a Typology of High School Dropouts

A review of literature on high school dropouts revealed a variety of evidence for the existence of homogeneous subgroups of high school dropouts. One of the objectives of this dissertation is to present that evidence. Five arguments are offered to support the notion that distinct subgroups of high school dropouts exist.

Definition of a "Dropout"

A major problem facing theory development, the study of high school dropouts, and systematic prevention/intervention efforts around the dropout problem is the lack of agreement on the definition of a dropout (Rumberger, 1987; LeCompte & Goebel, 1987).

Given that the U.S. Federal government, state, and local agencies, as well as researchers, use a variety of definitions to measure the problem, understanding the nature of the problem is difficult. It is likely that the lack of consistent measurement of the problem is the result of the lack of a consistent target. That is, because there is no typical "dropout," standardization of measurement has been impossible.

The dominant conceptualization of the high school dropout can be identified as originating from a deficit perspective: dropouts are "losers," people who occupy the most socially problematic segments of our society (Fine & Rosenberg, 1983). Thus, dropouts are perceived as missing something critical to their success in society. This conceptualization has empirical support. Fagan and Pabon (1990), for example, found that dropouts report higher levels of delinquency and drug involvement than non-dropouts. Likewise, Ekstrom, Goertz, Pollack and Rock (1986) reported that dropouts were poorer students, and had more disciplinary problems than non-dropouts. It has also been shown that dropouts are over-represented in the unemployment lines (U.S. Department of Education, 1996), and have been shown to be a negative influence on the nation's economy (Levin, 1972 cited in Rumberger, 1987; Kraska, 1991).

There is, however, an alternative perspective. A few authors, while not directly refuting findings such as those presented above, contest the notion that dropouts are losers and conclude that the predominate perspective blames the victim (Fine, 1983; Fine & Rosenberg, 1983). Using ethnographic interviews, Fine (1983) found that many of the participants in her sample did not demonstrate the stereotypical characteristics of the "loser" dropout. In fact, Fine and Rosenberg (1983) noted that many dropouts in their sample exhibited behaviors that contradict the stereotype. They argue that the dropout is

an adolescent who cannot properly interface with society as represented by the mainstream educational establishment. However, the fact that dropouts do not interface with the educational establishment is not necessarily the fault of the dropout. Both Fine (1983) and Fine and Rosenberg (1983) focus on the educational establishment, as well as the interaction between the adolescent and the educational establishment, as influences that are just as important as individual factors (e.g. laziness, hopelessness or low abilities), in producing a dropout.

This problem, the lack of a consistent definition of a dropout, also has substantial impact on the research into the phenomena. First, operational definitions are inconsistent across studies, making cross-study comparisons problematic (Morrow, 1986; Rumberger, 1987; LeCompte & Goebel, 1987). Anyone conducting a study of high school dropouts must formulate an answer to the question, "Under what circumstances should a single person be classified as a high school dropout?" There is a wide range of operational definitions of a high school dropout. Rumberger (1983) defined a dropout as a person aged 18 to 21 years who had not completed high school. Chavez, Edwards, and Oetting (1989) defined a dropout as a person who was high school aged but absent from school, without contact, for a period of 30 days or more. Garnier, Stein and Jacobs (1997) defined a dropout as an 18 or 19 year old who had not completed high school or attained a GED. Kaplan, Damphousse, and Kaplan (1994) defined a dropout as a person who had not attained a high school diploma 8 to 10 years after their expected year of graduation. Clearly, the lack of consistency in definition makes cross-study comparisons difficult and synthesis near impossible.

From the practitioner's perspective the "who is a dropout" problem hinders program design and implementation. The failure to develop an accurate, uniform method of assessing and measuring the dropout problem directly impacts design and implementation of prevention and/or intervention programs. When data on the extent of the dropout problem are unclear, the data that are available cannot be used efficiently. This confusion is problematic for assessment, intervention, and prevention efforts. The public health model of prevention indicates the need for initial assessment before prevention efforts are implemented. The fact that the "problem" has such a hard-to-pin-down definition makes effective needs assessment efforts difficult, and subsequent program design and/or implementation equally troublesome.

The ambiguity in the definition of a dropout was the major impetus for this research. Since the beginning of mandatory education, the problem of school dropouts has been studied continuously. Still, no consistent definition has been produced. It is likely that the genesis of this ambiguity in definition lies in the conceptualization that all dropouts are alike.

Homogeneous Subgroups

From the variety of operational definitions and reported rates of dropping out, two questions remain: Are all dropouts alike? Should dropouts be studied as a homogenous group? It is clear that each definition captures a semi-distinct group of adolescents. Further, it is likely that each group demonstrates different characteristics. Indeed, does the adolescent who leaves school to make money exhibit the same behavior patterns as the dropout who leaves school to have more fun? Rumberger (1987) notes that, "there is no 'typical' dropout" (p. 112) and indicates that causes, and consequences, of leaving

school for different types of people need to be explored. Should the student who leaves school because he does not feel connected to the school be directed toward, from the preventionist's and interventionist's perspective, the same sorts of programs as the adolescent who is expelled from school? The idea of sub-types of dropouts is not as revolutionary as it is evolutionary, as several studies have been conducted that examine sub-groups of high school dropouts.

A study conducted by Cairns, Cairns and Neckerman (1989) directly addressed the issue of heterogeneity in high school dropouts. They collected data from 475 7th grade students during the 1982-1984 school years and followed this cohort up during the 1987-1988 school year. The authors used three analytic strategies in an attempt to predict early school departure using variables from social (e.g. peer influence), individual (e.g. aggression) and family (e.g. SES) domains. Cluster analyses were performed to form homogeneous sub-groups of adolescents. The authors found that homogenous clusters of adolescents could be constructed such that prediction of early school departure was reasonably accurate. That is, the cluster structure obtained at time 1 was predictive of school departure by time 2. The composition of each cluster (profile) was examined and differential dropout rates were uncovered. Thus, when 7 distinct profiles were derived, Cairns et al (1989) showed that, while some clusters contained a higher percentage of dropouts, dropouts did not cluster into a single profile. This is telling evidence regarding the heterogeneity of the high school dropout population. The authors concluded that dropouts were as heterogeneous as students who remained in school. In fact, there were dropouts who looked more like in-school students than other dropouts.

Another study sought to differentiate adults who had not completed high school into types of learners. Martin (1984, 1986, 1987) used ethnographic interviews to classify "adult high school non-completers" into six "broad life-style classifications." Martin (1987) interviewed participants who were recruited from a diverse set of locations about all aspects of their lives, including education, family, and employment history. Data analysis included completion of biographic case histories and classification of those histories into groups by a panel of judges. Martin (1987) concluded "the findings suggest that literacy practitioners might improve their efforts to meet the learning needs of non-completers by concentrating their efforts on targeted segments of this population" (p. 43-44). Martin's (1984, 1986, 1987) efforts to classify adult learners into types is relevant in an important way. In these studies, it was clear that participants had varying experiences in the educational system, but had experienced similar results, illiteracy. The efficacy of these programs, Martin (1987) argued, was dependent on coupling the correct approach to the right person. There is no one-size-fits-all solution to illiteracy as there is no one-size-fits-all explanation for illiteracy. The same argument can be made for dropouts.

Streeter and Franklin (1991) also studied the heterogeneity of academically at-risk youth. They examined the social-psychological characteristics of high school dropouts entering one of two intervention programs that were placed in so-called "alternative high schools." Each program was designed, located and implemented with a different population in mind. One school served adolescents from predominantly lower-SES backgrounds (n=34) while the other served adolescents from predominantly middle-SES backgrounds (n=85). Most (51%) of the families who had adolescents enrolled in the program designed for lower-SES students reported family incomes of less than $11,000

per annum and were from diverse ethnic backgrounds. The other school indicated that a large percentage of the families (40%) reported family incomes of more than $40,000 per annum and was almost exclusively white (95%). Using a wide variety of psychological and social measures to assess the differences between these two groups of in-treatment high school dropouts, Streeter and Franklin (1991) revealed that the middle-income dropouts had significantly lower levels of family cohesion, were more likely to be involved with drugs, had higher levels of depression and suicidal ideation, and had more difficulty with education. Streeter and Franklin (1991) drew several conclusions from their data. First, they noted that the "problems experienced by the middle class dropouts are not socioeconomic or academic in nature. Rather, this group was found to have serious behavior and family problems" (p. 217). They also suggested that prevention and intervention must be tailored to fit the needs of a particular dropout sub-population. They noted that "...effective dropout prevention and intervention requires remediation which transcends academic skills deficiencies and focuses on problems which go beyond the scope of the traditional schools (e.g. depression, substance abuse, family dysfunction)" (p. 217).

Ukaga, Yoder and Etline (1998) used National Educational Longitudinal Study (NELS:88) data to look at urban versus rural high school dropouts for evidence of differences in the relationship between a set of psychological measures and educational expectations. Using the core sample from NELS:88, where over 24,000 adolescents and 20,000 parents completed a variety of questionnaires and took part in a series of cognitive tests, Ukaga et al (1998) found no compelling differences in the models for rural versus urban youth when attempting to predict expectations for completing secondary school

with a set of predictors (year of birth, seen as troublemaker, locus of control, self-concept, educational aspiration, and parents' level of education).

Both of these studies (Ukaga et al, 1998; Street & Franklin, 1991) attempted to show that there was a unique aspect of a specific sub-population that required specific attention. In one study (Street & Franklin, 1991) compelling differences were discovered while the other study (Ukaga, Yoder& Etling, 1998) did not discover meaningful differences. In effect, Streeter and Franklin (1991) suggest that dropouts from different SES levels form homogeneous groups. In each of these studies the authors, rather than making generalization about dropouts, attempted to show that homogenous sub-groups exist within the dropout population. However, they chose to differentiate these subgroups based on their demographic factors (SES, rural/urban). Their premise, that homogeneous subgroups exist within the dropout population, was supported in the data. However, whether or not SES (or rural/urban) is the more accurate way to differentiate the sub-groups remains unclear. While SES certainly does have an impact on the experiences of every adolescent, it is likely that the experiences and behaviors of students themselves are more relevant to the understanding of the dropout phenomena.

LeCompte and Goebel (1987) examined a variety of methodological issues surrounding dropout research. Specifically, they discussed the ambiguity of definitions, the lack of longitudinal analyses, issues and problems around dropout rate aggregation, and, most relevant to the discussion here, the "new types of dropouts" phenomena. In their discussion of new types of dropouts, they focus on young (elementary- or middle-school) dropouts as well as so-called "atypical high school dropouts." While they provide no direct data, LeCompte and Goebel (1987) note that there are:

> ...students who may even have good grades, but who also have socioemotional problems, including drug use, pregnancy, and intolerable family conditions that make continuation in school difficult. Conventional characterizations of the dropout population minimize the number of dropouts who are academically competent and/or from middle- and upper-middle-class backgrounds...these students need different program offerings from the standard remedial vocational fare usually available (p.263).

Each of these studies brings attention to the fact that sub-types of dropouts have been studied, in one fashion or another, for some time. The idea that not all dropouts are cut from the same cloth is not new. The aim of the current research is to extend this logic and study specific, theoretically informed, and empirically derived types of high school dropouts.

Prevention Science

Successful dropout prevention/intervention strategies are either targeted to the specific needs of a dropout sub-population or are multi-component (Dryfoos, 1990). Here, too, support for the idea that there are unique types of dropouts can be found.

In recent decades, empirical studies have shown that alcohol and drug misuse and other problem behaviors such as delinquency and violence are predicted by both individual and environmental risk factors (Hawkins, Catalano & Miller, 1992; Kandel, Simcha-Fagan & Davies, 1986; Newcomb, Maddahian & Bentler, 1986). Current theory

in problem behavior prevention identifies those variables that are predictive of a particular problem behavior and targets them for intervention (Coie, et al., 1993; Institute of Medicine, 1994; Hawkins, Catalano & Miller, 1992). Such predictors are classified as risk- or protective-factors (RPFs). Within such a model, a risk factor is any variable that increases the likelihood that a negative outcome occurs while a protective factor is a variable that decreases the likelihood that a negative outcome occurs. Hawkins, Catalano and Miller (1992) suggest that by successfully targeting RPFs with empirically validated prevention/intervention programs, a reduction in negative outcome behaviors such as delinquency, poor school performance, or alcohol involvement may occur.

Gainer (1987) identified more than 1000 dropout prevention and intervention programs and noted that most were directed toward basic education assistance and/or personal counseling. These are targeted programs that could certainly help particular dropouts. However, those former students who had little need of education assistance or personal counseling (e.g. the young male who needed to begin work to support his family) would not necessarily be provided useful services. Dryfoos (1990) also reviewed a variety of prevention and intervention programs. Regarding school failure and school dropout programs, she outlined a set of "common concepts" that are relevant to this discussion. First, she indicated that there is no program, or component of a program, that has been evaluated as superior to all others. She noted that flexibility was paramount, as programming professionals need to tailor programs to the needs of unique communities. Second, she noted the need for strong educational support, usually in the form of a school climate, which was positive to student retention and learning. Also, she noted that "intensive, sustained counseling is essential for high-risk students who need assistance

with personal and family programs and, in many cases, on-site health and social services" (p. 218). Indeed, many of the programs that Dryfoos (1990) rates as effective were multi-component programs (e.g. *Adopt-A-Student*; *Summer Training and Employment Program*; *The Boston Compact*). These programs may be effective because they are flexible and designed to address the problems of a variety of different youth facing a wide array of problems.

The efficacy of multi-component programs, those that can help the learning-disabled student as well as the student with severe problems at home, provides evidence for a typology of dropouts. These programs appear to be successful because they are either (a) equipped and designed to address the needs of different types of dropouts or, (b) equipped and designed to address the needs of a specific type of dropout. The program evaluation literature contains a variety of evidence supportive of this notion (see Posey & Wong, 2000, for an annotated summary of many empirically validated prevention programs). Thus, there is evidence that indicates that effective dropout prevention programs are either targeted to specific subgroups of dropouts or, are multi-component and flexible enough to address the needs of a variety of dropouts (Dryfoos, 1990; Hawkins, Catalano & Miller, 1992).

Self-Reported Reasons for Leaving

Evidence for a typology of distinct and homogeneous dropouts can also be found in dropouts' accounts of their own educational exodus. Studies of high school dropouts have often attended to self-reported reasons for adolescents leaving school. When high school dropouts are asked why they left school a variety of reasons emerge as important. It has been noted that patterns of self-reported reasons for leaving school have been fairly

consistent over time (Jordan, Lara & McPartland, 1996; Perrella & Bogan, 1964, Rumberger, 1983). It is clear that people leave high school prematurely for many reasons; it is likely that these reasons coalesce into useful patterns.

Many explanations for leaving high school prematurely are common across studies: expulsion, school-related reasons, family-related reasons, and work-related reasons are prevalent (Ekstrom, Goertz, Pollack, and Rock, 1986; Tidwell, 1988; U.S. Department of Education, 1996). School-related reasons include "poor grades," "difficulty," or simply, "didn't like school." Family-related reasons include "support family," "pregnancy," or "marriage." Work-related reasons often include: "job offer," "chose to work," and "needed to work to support family."

The U.S. Department of Education (1996) reported that school- and family-related reasons for dropping out were most common. Sex was seen to be an important factor in reasons for dropping out, particularly for family-related reasons. Their analysis based on sex revealed that in both 1982 and 1992, pregnancy was an important issue for female dropouts. Marriage, however, while it was deemed an important reason for dropping out in 1982, was seen as less important by the female high school dropouts of 1992. In terms of sex differences, the findings of Ekstrom, Goertz, Pollack and Rock (1986) were consistent with other findings. They found that twice as many males as females reported that working was the primary reason why they left school.

Ethnic differences in reasons reported for dropping out also exist. Jordan, Lara and McPartland (1996), studying 1000 participants from the National Educational Longitudinal Study (NELS:88) data, found racial/ethnic and sex differences in reported reasons for dropping out of school. They found that White dropouts cited school-related

reasons to a greater extent than did Latino dropouts. In addition, they found that African American dropouts cited expulsion more often than did either Whites or Hispanics. They also found that males reported more work-related reasons for dropping out and that females reported more family-related reasons for dropping out. While Jordan, Lara and McPartland (1996) included socioeconomic status in their analysis, it was only a significant factor when family-related reasons were cited for dropping out: family-related reasons including starting a family, taking care of child, etc. That is, those dropouts who were lower in SES cited more family-related reasons for dropping out than did those adolescents from relatively higher SES.

Self-reported reasons for dropping out can inform any study of high school attrition. However, it should be noted that often, reasons that are indicated as important to leaving school are symptoms, rather than causes, of the school leaving. For example, while a large percentage of female school dropouts may indicate pregnancy as the primary reason that they left school, the underlying factors may actually more be important to our understanding of the dropout problem.

That dropouts report a variety of reasons for leaving school is not surprising. The decision to leave school often does not have the benefit of a clearly drawn line between cause and effect. This is especially true given the developmental stage when this decision is generally made. However, the variations in reasons cited for leaving are indicative of the varieties of paths the adolescents take away from the educational system. What is currently under consideration is that these are a *set* of paths away from the educational system. The variation inherent to adolescents' self-reported reasons for leaving the educational system is important to consider. Some students report a variety of reasons: to

make money, to work, to support family. Others report a single reason: I was kicked out. The variation in these self-reports provides more evidence for a typology of high school dropouts; different high school dropouts report widely different reasons for leaving. To consider them as a single population is to lose information about a heterogeneous population with a wide variety of needs.

Dropout Theory

Theoretical work on the school dropout phenomena has been slow to develop (Rumberger, 1987; LeCompte & Goebel, 1987). It has been uneven, and the need for a comprehensive model is growing (Rumberger, 1987). While various theoretical models have been applied, generally, each theory has a weakness that has not allowed it to become clearly predominant. This is because each theory defaults to a conceptualization of dropouts as a single, homogeneous group. Consequently, theories grow from research that, depending on the particular mix of dropout types that are included in any given sample, result in ambiguous empirical results. Each theory may be more or less useful when specific types of dropouts are considered. Social Learning Theory, for instance, may explain dropout behavior for dropouts who are alienated from the school system, while Social Control Theory may be best suited to explain delinquent dropouts. It is possible that the question "which theory fits?" needs to be modified to read, "For what

The major task of this paper is to develop an empirically and theoretically valid method to classify high school dropouts into homogeneous sub-groups. A variety of relevant theories will now be briefly reviewed. Each of these theories directly influenced the development of the typology set forth in this paper.

Social Control Theories (Hirschi, 1969) are most often applied to delinquency, but may also be applicable to the study of school dropouts. Social control theory suggests that delinquent behavior is a result of the breakdown of social controls. In this regard, social controls are defined as those person-group relationships that establish boundaries around what is acceptable and unacceptable behavior. Social control theorists, for example, often consider religiosity an important behavior control factor. Identification with positive religious social values, it is thought, restrains an individual from unacceptable behavior. Social control theorists focus on several other domains that are also considered effective for social control: school, the family and the peer group. In each case, identification with a domain, when the domain holds non-delinquent behavior as normal and good, will influence an individual to behave in a pro-social manner. Often, association with the educational system is seen as a positive social control, and so dropping out of school is seen as an anti-social behavior.

It is difficult for *Social Control Theory* to account for findings such as those offered by Ekstrom, et al (1986), Tidwell, (1988) and the U.S. Department of Education, (1996). They all suggest that some students leave school, not because they do not like school, but rather, because they are required to work. Likewise, Fine (1983) and Fine and Rosenberg (1983) suggest that many students who leave school are not delinquent, which would be a basic prediction of *Social Control Theory.*

Problem Behavior Theory (Jessor & Jessor, 1977) also attempts explains deviant behavior. For Jessor and Jessor (1977), deviant behavior is the result of nonconforming attitudes and values that result in a cascade of deviant behaviors. That is, once a specific attitude and/or value leads to a single non-conforming or deviant behavior, there is an

escalation of those and other deviant behaviors. In effect, adolescents become immune to social norms. There are a variety of empirical studies that support this theory. Mensch and Kandel (1988), for instance, examined age of first onset of drug use and school dropout behavior and found that prior first use of drugs was predictive of dropping out of school. Thus, early deviant behavior (use of drugs) triggered future deviant behavior, dropping out of school.

As with *Social Control Theory*, it is difficult for *Problem Behavior Theory* to account for findings such as those offered by Fine (1983) and Fine and Rosenberg (1983) who suggest that many students who leave school are not delinquent. Dropouts' delinquency would be a primary prediction based on *Problem Behavior Theory.*

Two social development theories also attempt to explain high school dropout behavior. Studies from Hawkins, Catalano and Miller (1992) and Oetting and colleagues (Oetting, et al 1998a, 1998b, 1998c) look at school failure and early school departure from a social-developmental process approach. While each of these theories differs in expression, a common core element of each is that positive and negative outcome behaviors are a result of a development process. Furthermore, all of these authors assert that developmental processes are impacted directly by primary socialization agents: the community, the family, the school and the peer group. It is through these agents that values and norms, and consequently behaviors, are conveyed to youth. Other influences are hypothesized to be secondary, tertiary, or further removed (i.e. mediator and/or moderator relationships). These two theories differ in the details. Hawkins, Catalano and Miller's (1992) *Social Development Model* focus on both opportunities and rewards for pro-social behavior at each of the primary socialization agents whereas Oetting et al's

(1998a, 1998b, 1998c) *Primary Socialization Theory* focuses on attachment to the primary socialization agents.

All of these theories inform the development of the high school dropout typology. Each theory holds that problem behavior such as early school departure is not singularly caused. Furthermore, each cause can emerge from a different socialization agent (family, school, peer, community). This is an underlying assumption in the development of this typology of dropouts. Dropouts are unique, but there are a limited number of paths to leaving school. Thus, there are multiple influences that can come from a variety of sources that all point toward the decision to leave or stay in school. These theories serve as an additional justification for the typology because, for specific instances (linked to types of dropouts), each theory may be correct. For the delinquent dropout, *Problem Behavior Theory* may provide solid predictions about how and why a particular adolescent chooses to leave. Meanwhile, for the adolescent who leaves school because she does not believe that it is giving her pragmatically useful skills, *Social Control Theory* may be a better explanation. In conclusion, this divergence of theory in the school dropout arena may be a result of the variety and distinctness of high school dropouts.

Conclusion

Adolescents who fail to complete high school have been identified with several labels in the literature and in practice: push-outs, disaffiliates, capable dropouts, stop-outs, truants, left-outs, intermittent learners, and early school leavers. Likewise there are adolescents who have been suspended, expelled, removed, and kicked-out. From this collection of labels, a question arises: does each label represent the same type of person? That is, does the adolescent who has been labeled one way differ in an important way

from the adolescent who is labeled in another way? Further, does each "type" experience the consequences of their non-completion similarly? Will they respond to prevention programs the same way? Will they respond to treatment the same way? There is certainly literature that indicates that dropouts are, largely, delinquent adolescents. There is also a body of literature that indicates the opposite, that they are capable youth who disengage from an educational system within which they feel disconnected. Below, four empirically informed and theoretically derived "types" of dropouts are presented. The purpose of this dissertation is to generate empirical evidence that evaluates these types to assess whether or not they exist independently from one another as well as the general population. For each type, a brief conceptualization is followed by a review of relevant literature.

A Proposed Typology of High School Dropouts

What follows are brief descriptions of each type of dropout that is being proposed: *Delinquent Type*, *Passively Phased-Out Type*, *Actively Phased-Out Type* and *Troubled Type*. For each type, a brief description is presented. The descriptions are useful for drawing boundaries around each type, distinguishing one from another.

This typology is derived from a philosophical pragmatism; it is also hypothesized that prevention and intervention efforts that are specifically tailored and targeted at these types will be most efficacious.

This typology is also formulated from theory and/or studies that imply their existence. Studies and theories are cited, where possible, to help bring the typology into clearer focus. This typology, however, may be treated as a set of theoretically informed and empirically derived hypotheses. In each case, the fundamental hypothesis is that the sub-type exists.

Delinquent Type

The first unique sub-group of high school dropouts proposed herein is the *Delinquent Type*. These dropouts are characterized by high levels of antisocial behaviors such as drug use, violence and involvement in crime. They are not, as a group, necessarily incapable of the level of academic work required of today's student, although many are. They are not, as a group, necessarily among the most psychologically distressed, although many are. They do exist in systems of peers that condone, and even encourage, antisocial behavior. They are distinguished from the other types of dropouts primarily by their high levels of involvement in the full range of delinquent behaviors including drug involvement, violence, and crime.

It is not difficult to cite empirical evidence that indicates that dropouts are more involved in delinquency and drug use than non-dropouts; delinquency and drug use have been studied as correlates of dropping out for some time (Chavez, Edwards & Oetting, 1989; Chavez, Oetting & Swaim, 1994; Eggert & Herting, 1993; Fagan & Pabon, 1990; Menche & Kandel, 1988).

While a few specific studies will be described in more detail, any study of the relationship between dropout and delinquency could be used to argue for the existence of a delinquent sub-group of high school dropouts. Fagan and Pabon's (1990) study explored the relative contributions of drug-use, delinquency and social development factors to dropping out of high school. Fagan and Pabon (1990) recruited a sample from the adolescent population in schools (n=2069), as well as from the adolescent population that was not attending schools (n=398), in 6 inner city, urban, areas. Both of their samples were predominantly Black (74.0%) or Hispanic (20.4%). Participants were asked

to complete a survey instrument that was designed to measure demographics, delinquency, drug involvement, victimization, school experiences, and pressures and supports from family and school with regard to dropping out. A variety of outcome measures were derived using principal components analyses to reduce the predictor set to its most meaningful sub-set (i.e. the one that accounted for the most multivariate variation). Subsequently, using logit regression analysis, Fagan and Pabon (1990) found that drug use and delinquency did not add a meaningful amount of information to the explanation of dropping out of high school. They noted that "dropout is a function of specific social bonds...knowledge of delinquency or substance involvement adds little explanatory power..." (p. 335).

Fagan and Pabon (1990) reported a variety of additional findings. High school dropouts and non-dropouts differed on their involvement in crime; dropouts reported being involved in more crime than did in-school students. Also, both male and female dropouts reported higher severity and frequency of delinquent behavior than non-dropouts. Similarly, self-reported drug involvement data showed that both male and female high school dropouts were more seriously involved in drugs than their student counterparts. For instance, one in three male high school dropouts indicated that they had used serious substances more than 3 times during the past year—a rate three times that of male students.

An alternative explanation in the Fagan and Pabon (1990) research relates to the fact that they considered "dropouts" to be a homogenous group. While many dropouts in their study indicated involvement with drug, alcohol and delinquency behaviors, a majority did not. For instance, they reported that 40% of male high school dropouts were

highly involved in delinquent behaviors. Likewise, they reported that about one third of their dropout sample reported serious drug use. As drug use and delinquency are related, it is likely these rates are identifying the same adolescents. Consequently, there appears to a highly delinquent sub-group of dropouts; conversely, there appears to be a sub-group of dropouts that is not seriously delinquent. It is possible that the conclusions drawn by Fagan and Pabon (1992) may be biased by the fact that there are unique and independent sub-groups of dropouts and their analyses do not take this into account.

Identifying specific types of dropouts may have led to a more useful understanding of drug use, delinquency and school dropout. For instance, Fagan and Pabon (1990) found that "female dropouts report higher scores for conventional values and school integration despite their dropout status. But they also were the least socially integrated and had the weakest family bonds" (p. 333). Fagan and Pabon (1990) themselves imply an explanation that includes dropout sub-types when they say "there were several differences between males and females within groups (enrollment), which may reflect specific differences in the processes of leaving school or their involvement in other behaviors" (p. 334). That is, the reason that an adolescent eventually leaves school is as important as their sex or ethnicity in determining differences among delinquency and/or drug use.

Both Chavez, Edwards and Oetting (1989) and Chavez, Oetting and Swaim (1994) reported findings from a study of dropout youth that further promotes the argument that a *Delinquent Type* of dropout exists. Both studies used data collected from three sites: an urban city, a mid-sized non-urban city and a small rural town. Dropouts were identified by local school districts and contacted by field researchers. For each

dropout who was contacted and agreed to participate, two comparison participants were identified: a student with academic problems (matched to the dropout by GPA, sex, age, and ethnicity) and a comparison student (matched to the dropout by sex, age and ethnicity). The sample included 1,637 participants—approximately 550 in each of the three categories. Each participant was paid ($10 to $20) for participation. All participants were asked to complete a survey instrument designed to measure a wide range of behaviors as well as psychosocial characteristics (risk- and protective-factors). Chavez, Edwards and Oetting (1989) examined the epidemiology of drug involvement and delinquency and uncovered near perfect-consistency in their results: dropouts were more involved with drugs and alcohol, and more delinquent, than students. Chavez, Oetting and Swaim (1994) used cluster analyses to form eight scales that were designed to measure delinquent behavior. Scales included: use of a weapon, drug distribution, stolen car, serious theft, vandalism, driving violations, and school discipline. MANOVA results indicated that dropouts had the highest scores on each of the eight sub-scales, followed by academically troubled students and comparison students—the effect was strong (22% of the multivariate variance was accounted for by enrollment status). There was also a significant effect for sex and ethnicity, although there were no interactions. Males, and White-Americans respectively reported significantly higher overall rates of delinquency. They concluded that enrollment status was an important fact in predicting delinquent behavior.

Considered together, these three studies (Fagan & Pabon, 1990; Chavez, Edwards & Oetting, 1989; Chavez, Oetting & Swaim, 1994) all point toward delinquency and drug involvement as important to the study of high school dropouts. Each study concludes that

dropouts are more likely than students to be involved in delinquency and drug misuse. In each case, however, it is also clear that not all dropouts are involved in delinquent behavior. In fact, each of the studies indicates that most dropouts are not involved in serious delinquent behaviors.

While there is overwhelming evidence that there is a proportion of the "dropout population" who are involved in delinquent behavior, such as drug use, the same studies indicate that being a high school dropout is not a foolproof predictor for being a delinquent youth. Certainly, dropouts use alcohol and drugs at rates that are higher than non-dropouts, but there is still a large proportion of both groups who do not use at all. It is clear that dropouts are involved in delinquent behavior at a higher rate than non-dropouts. But it is possible that much of this difference can be attributed to a sub-group of dropouts. They are a unique sub-classification of dropout.

Passively Phased-Out Type

The second unique sub-population of high school dropouts proposed herein is the *Passively Phased-Out Type*. Not all adolescent high school dropouts are expelled; many depart slowly, a slow-motion disengagement that culminates in the decision to leave. These adolescents are characterized by a disorder in life events (e.g. they work too much and too early, they become parents in their teens, et cetera). Many have academic difficulties. Some of these difficulties are environmental, like homes that are non-supportive of educational success. Many of these difficulties may be personal, such as learning disabilities. They are distinguished from the other types of dropouts by their low level of academic achievement in school. They are probably no more involved in delinquent behavior that the non-dropout. They are not necessarily alienated from the

school experience as a whole. Dropouts of this type may report liking school, particularly for the social aspects. These adolescents are better characterized as school fadeouts, rather than school dropouts. There are a variety of studies that point toward the existence of a unique subgroup of dropouts that are passively phased out of school.

Academic difficulty is often cited as a cause of early school departure (Elliot, Voss & Wendling, 1966; Kaplan & Luck, 1977; Morris, Ehren & Lenz, 1991; Pittman, 1991). It seems reasonable that if students cannot succeed academically, they leave school. There is empirical evidence for this supposition. Kaplan and Luck (1977), for instance, reported that 50% of high school dropouts were held back a grade some time in their schooling.

Several authors (Barrington & Hendricks, 1989; Morris, Ehren & Lenz, 1991) attempted to build models that used academic performance or ability to predict which students would drop out of high school. Barrington and Hendricks (1989) collected data on 651 freshmen students entering one of two high schools in 1981. Their analyses revealed that dropouts, as compared to graduates and non-graduates who were still enrolled, were (1) absent from school significantly more often in grades 5 through 12, (2) had significantly lower scores on the Iowa Achievement Test in 3rd, 5th and 8th grades, (3) had lower scores on the Otis-Lennon Intelligence test given in the 3rd grade, and (4) had significantly more failing grades in grades 7 through 12. They commented "...the future dropout shows a clear indication of academic problems by the third grade" (p. 316) and concluded that future dropouts can be accurately identified as early as middle school based on academic data that is typically collected. Morris, Ehren, and Lenz (1991) reported similar findings. They examined performance of students from 4th grade to 8th

grade and discovered that at all grade levels getting poor grades significantly predicted dropping out of high school. It would appear that the student who struggles in school, is held back, or has problems studying and/or testing, is more likely to leave school than the student who is well-adjusted academically.

Yet academic difficulty, too, may have an underlying explanation, so this is not to say that there are students who are, inherently, incapable students. Elliot, Voss, and Wendling (1966), for instance, concluded that 75% of academic failure in high school was caused by lack of adequate study skills. Furthermore, they stated that 75% of those students who dropout of high school had the intellectual abilities necessary to complete work, but not the study skills necessary for success. This outcome was likely directly related to lack of an "educational culture" in the home and poorly funded schools.

It is also possible that adolescents who dropout of school are distracted, so to speak, from success. Rindfuss, Swicegood and Rosenfeld (1987) argue that the school dropout's life course is harmed. Using data from the National Longitudinal Survey of the High School Class of 1972 (NLS), interviews were conducted with a large sample (over 20,000 participants) and took place in 1972, 1974, 1976 and 1979. They found that disruption in the ordering of life events (such as graduating from high school) causes further disruption in later life events (such as entry into the labor force, entry into parenthood, etc.). Analysis presented by the U.S. Department of Education (1996) resulted in similar conclusions. They found that high school dropouts reported experiencing more disruptions in work, and had earlier entry into family life (in terms of marriage and children) as compared to non-dropouts. In terms of work, dropouts were more likely to be "unemployed or out of the work force" (p. 33) than high school

graduates. They were also more likely to have started a family; 53.1% of dropouts had children two years after "expected high school completion" while only 9.2% of graduates reported the same. Similarly, 42.9% of dropouts had been married 2 years after expected completion compared to 12.8% of high school graduates.

The *Passive Phased Out Type* of dropout is the adolescent who disengages from the education system for a variety of reasons: poor performance, parenthood, the need to work, et cetera. They are not pushed out of the system as much as allowed to fade out of the system. They are different than other types of dropouts in that they are, often, productive citizens. In any case, they are a unique sub-classification of dropout.

Actively Phased-Out (Alienated) Type

The third unique sub-population of high school dropouts that is proposed herein is the Actively Phased-Out, or Alienated, type. These are dropouts who may be academically capable but reject the purported benefits that the high school offers. They feel alienated from teachers, the school administration, and/or other students. They are distinguished from the *Passively Phased-Out* student by feelings of rejection both from and toward the school system. They may be involved in delinquent behaviors, but probably no more than students who stay in school and not to the extent as *Delinquent Type* dropouts. They are adolescents that Fine (1983) calls pushed-out, students who find the public education system alienating to the extent that their involvement in the system becomes intolerable. An example of this type of dropout would be an African-American student in a predominately white school system who has a sense (correctly or not) that institutional racism will prevent him from graduating. In that case, the adolescent may choose to leave school rather than continuing to subject him or herself to what is

perceived as a hostile environment. There is a variety of evidence to suggest that there are some students who are pushed-out, rather than dropout of high school.

LeCompte (1987) suggested that the public school system is trapped in the cultural context within which it was formulated—the 1950s. This cultural context had demographic, economic and social components. The system was designed when there were limited opportunities for women, a post-war emphasis on education as well as the resolve to fund it, many newly built, and neighborhood based, public schools and ethnic homogeneity. In many ways, LeCompte argues, this is not reflective of today's societal environment. Thus, the cultural context within which the public school system was founded no longer exists and furthermore, that school and the public education system have not met the challenges of these changes. "It is no wonder," she concludes, "that it becomes increasingly difficult to persuade marginal students to remain in school, and that new kinds of dropouts begin to appear" (p. 247-248).

However, there are dropouts who leave regardless of the educational opportunities presented to them. Fine and Rosenberg (1983) refer to this conflict as one of the central concerns of dropout research—do students leave school because of (a) individual differences and/or inadequacies, (b) educational and economic structures that do not support their educational needs, or (c) a combination of these two? Much of the theoretical work on dropout behavior falls into one of these camps. Many past theories that have been applied to the dropout problem have focused on individual differences and/or inadequacies: problem behavior theory (Jessor and Jessor, 1977) is an example of one such theory. On the other hand, other theoretical work has pointed toward poor

schools, discrimination, and lack of cultural sensitivity. These theories point toward institutions as problematic in the dropout equation.

There is evidence to support the notion that some students disengage from the school system because they feel alienated from it in either its fundamental philosophy or its specific expression. Tidwell (1988), for instance, interviewed 374 high school dropouts and found that students often indicated that they left because they were bored. In this study, there were more males than females in the sample and nearly half of respondents were Hispanic; approximately one-quarter of the sample were identified as Black or White. Data collection took place in the form of a one-on-one interview using both open- and closed-ended questions, usually in participants' homes. There was a variety of relevant results. First, participants indicated that the worst feature of high school was that "teachers were boring and not caring." In fact, Tidwell's (1988) data revealed that, for her sample, boredom was "by far, the most frequently cited school-related reason for leaving [in the open-ended questions]..." (p. 945). Participants also indicated that "poor grades," and "family reasons," were important factors in their non-completion. These results suggest that alienation from the school system, expressed as frustration and/or boredom, is a relevant cause of early school departure.

Similar findings are revealed in other studies. As previously cited, Ekstrom, Goertz, Pollack and Rock (1986) used HS&B data to examine differences between adolescents who completed school and those who did not. They too found evidence of the disconnection that dropouts experience in the academic setting. They reported, "the dropouts appear to feel alienated from school life" (p. 360). Indeed, the data shows that dropouts were less "interested in school," less "satisfied with the way education is

going," and "liked to work hard in school" less than their non-dropouts counterparts. Finally, Fagan and Pabon (1990, described in detail above) found that school attachment was lower for high school dropouts than for in-school youth with male dropouts showing the lowest levels of school attachment, followed by dropout females, in-school males and in-school females. Calabrese, and Poe (1990) reported ethnic differences in reports of alienation from school. Over 1,000 students were asked to complete a well-validated alienation scale. They found significant differences in terms of isolation and powerlessness: Latinos and African-American students reported more isolation and powerlessness than did Caucasian students.

Alienation alone, however, does not necessarily tell the whole story. Murdock (1999) studied the educational alienation and motivational contexts using a sample of 400 middle school students. Surveys of both students and teachers were administered. Teachers were asked to rate students on engagement in school tasks, the extent to which students were attending classes, participating in class and completing schoolwork. Students were asked to rate themselves, their teachers, and their friends on a variety of scales including: perceptions of teachers' long-term expectations, teachers' support, teachers' disinterest, peers' aspirations, peers' resistance to school norms, peers' academic support, economic limitations of education, and economic benefits of education. Students were also asked to rate their disciplinary problems at school. Students were divided into status-based groups on the basis of ethnicity and SES. In this case, SES was defined by participation in free- or reduced-lunch programs. Results showed that higher income Caucasian students were both more engaged in school and had fewer disciplinary problems than African-American students from either high- or low-income

households or Caucasian students from low-income households. Similar differences were detected among the motivational context variables. The most negative motivational contexts were seen in African-American and lower income Caucasian student survey data. For both engagement and disciplinary problems, motivation context variables were seen to be partial mediators between alienation and ethnicity/SES. Alienation, in other words, is affected by teachers, peers and economic outlook as perceived by students not, necessarily, by ethnicity or SES alone.

The student who is alienated from the school, or school system to the extent that they choose to leave is the *Actively Phased-Out Type* of dropout. These adolescents may be academically capable but feel that the school system has little to offer them. They are a unique sub-classification of dropout.

Troubled Type

The fourth unique sub-population of high school dropouts that is proposed herein is the Troubled Type. These are adolescents who exist in survival mode. Achievement in school, in these cases, is not considered very important. Many may have histories of physical, emotional or sexual abuse, neglect or other trauma. They are more involved in delinquent behavior than either *Alienated Dropouts* or *Passively Phased-Out* dropouts, but less than *Delinquent Type* dropouts. They are distinguished from the *Delinquent Type,* with whom they are most similar, by problematic levels of psychological adjustment problems that are the result of their histories. *Troubled Dropouts* can be academically able and may not be alienated from the school system. Many come from middle- or upper-middle-class homes where they have access to a good educational system is more likely. There are several studies that indicate that high school dropouts are

less psychologically healthy than non-dropouts (Streeter & Franklin, 1991; Kaplan, Damphouse & Kaplan, 1994). Again, typically when dropouts are aggregated into a single group a process of empirical disaggregation may result in a distinct and unique sub-group of adolescent dropouts.

Streeter and Franklin (1991), reviewed above, used a variety of psychological and social measures to assess the differences between these two groups of in-treatment high school dropouts. They found that there was a sub-population of dropouts for whom serious behavior and family problems were more salient than socioeconomic or academic problems. They suggested the need for prevention and intervention efforts to account for this sub-population.

Kaplan, Damphouse and Kaplan (1994), detailed above, also found a statistically significant, negative, relationship between psychological dysfunction at time 1 (7^{th} grade) and graduation. Thus, existing mental health issues are also predictive of leaving school early.

The *Troubled Type* dropout is the most difficult to cleanly define because most studies of dropouts focus on more immediate problem behavior (e.g. drug use and delinquency). However, it is hypothesized that this distinct sub-type exists. There are adolescents who are not alienated from the school system, who are not involved in extreme levels of delinquency, and are not simply engaged in a life-course that is not pro-education. There are those who simply survive. A runaway, for instance, may be only involved in delinquency for the purpose of survival. The runaway may not be attending school because he or she is not living with her parents, but is on his or her own. This type

of dropout needs prevention and interventions that are distinct from those that would be most effective with other types.

Method

Participants

Participants for the present study were drawn from the participant pool from a longitudinal study of dropout youth called *Drug Use and Mexican-American Dropouts* (National Institute on Drug Abuse # R01 DA 04777).

All participants who were identified in the original study as high school dropouts, and all participants who were identified as enrolled in school were selected. Dropout respondents were defined as youth who were absent from school for one month or more without having contacted the school to provide a reason.

Table 2 shows the number, and percentage, of participants by enrollment status, sex, and ethnic group. The participant pool (N = 2,203) was comprised of 1,194 males (54.2%) and 1,009 females (45.8%). In addition, 36.0% (n = 794) were White non-Hispanic and 64.0% (n = 1,409) were Latino. It is important to note that a slight majority of participants were identified as High School Dropouts and a slight majority of participations self-identified as Latino. It is also important to note that these differences in relative sample size are not indicative of relative rates of dropping out but are, rather, the result of methodological manipulations such as matching and over-sampling of minorities (see below).

Table 2

Sample Size of Enrollment Status by Sex and Ethnicity

Group	N	Sex			
		Male		Female	
		n	%	n	%
H.S. Dropout	1,213	673	55.5	540	44.5
Enrolled	990	521	52.6	469	47.4
Total	2,203	1,194	54.2	1,009	45.8
		Ethnicity [a]			
		White [b]		Latino	
		n	%	n	%
H.S. Dropout	1,213	439	36.2	774	63.8
Enrolled	990	335	35.9	635	64.1
Total	2,203	794	36.0	1,409	64.0

[a] Self identified [b] White non-Hispanic.

Respondents were paid $10 (for enrolled participants) or $25 (for participants who were identified as "dropouts") for participation.

Materials

Data were collected via self-report survey and the examination of school records.

The survey was a multiple scale instrument developed by the Tri-Ethnic Center for Prevention Research at Colorado State University. Only a few scales included in the original instrument were used. Physical health measures, and violence and victimization information, for instance, were not analyzed in the present study.

A description of each scale used in the analyses presented herein follows. Measurement properties of the scales were assessed via examination of reliability coefficients, corrected item-total correlations, and fit statistics from confirmatory factor analysis (CFA). For a few of the variables analyzed herein, however, some of these analyses were not possible. The reliability of high school grade point average, or drug involvement, for instance, cannot be assessed using these methods due to the nature of how these data were collected and/or calculated. Also note that while $\alpha > .80$ is the standard criterion for scales to be considered reliable, the notion of a standard is open to debate, see Nunnally & Bernstein, (1994). For all CFAs the following criteria were used to assess quality of fit: standard indices of fit (CFI, NFI, and NNFI) greater than .95 as indicated by Hu and Bentler (1999), and a root mean square error of approximation (RMSEA) less that .10, as indicated by Browne and Cudeck (1993).

School Bonding

School bonding was measured with four Likert-type, self-report, survey items (see Table 3). For each item listed in Table 3 possible responses included "A lot," "Some," "Not Much," and "No," and were assigned a value from 1 to 4. Items were reverse scored such that high scores were indicative of high levels of bonding to teachers and school.

A variety of item-level information is shown on Table 3, including item mean and standard deviation information along with the percentage of missing data for that item. Intra-item information is also provided on Table 3: the scale reliability coefficient (assuming equally weighted items), corrected item-total correlations, and the percentage of cases that are missing at least one item (list-wise missingness) are shown. In terms of missing values, 3.4% of cases were missing at least one of the four values. Scale

reliability, as indicated by Cronbach's Alpha coefficient, was acceptable, $\alpha = .85$. Corrected item-total correlation coefficients were all higher than .63 and in the correct direction.

Table 3

Scale Characteristics: School Bonding (N = 2,128)

Item	M	SD	% Missing [b]	Corrected item-total correlation
I like school	2.73	.92	1.5	.73
Teachers like me	3.10	.75	2.3	.64
I like my teachers	2.94	.80	2.0	.73
School is fun	2.63	.89	1.6	.68

[a] Standardized Cronbach's $\alpha = .85$. [b] List-wise missing: 3.4%.

Confirmatory factor analysis was used to (a) assess the measurement model in the School Bonding construct, and (b) generate the factor scores of use in subsequent cluster analyses.

The initial model for the School Bonding construct included all four items (see Table 3) as observed, endogenous, variables, and a single latent factor. However, fit was unacceptable, as indicated by fit statistics: CFI = .82, NFI = .82, NNFI = .47, RMSEA = .43. Consequently, a second-order three factor model, was examined. For this model, two first-order factors (Teacher Bonding and School Bonding) were related to a single, second-order, factor (Bonding). Assessment of this model revealed a strong fit, CFI > .99, NFI = .99, NNFI = 1.00, RMSEA < .01. Factor loadings for the first-order

relationship ranged from .80 to .93 while factor loadings for the second-order factor were .85, and .82, for School Bonding and Teacher Bonding, respectively.

Regression weights from this final CFA were then used to estimate the second-order (latent) factor score, School Bonding, from the observed variables. Thus, for each participant a standardized School Bonding factor score was calculated. Note that descriptive statistics for all final, standardized, constructs are shown on Table 8, and are broken down by sex, ethnicity and enrollment status.

Psychological Adjustment

The construct Psychological Adjustment was a set of two measures of psychological function; participants were asked to answer questions that were designed to measure depression and anxiety.

Depression

Depression was measured with seven Likert-type, self-report, survey items (see Table 4). For each item listed in Table 4, possible responses included "A lot," "Some," "Not Much," and "No," and were assigned a value from 1 to 4. Items were reverse scored such that high scores were indicative of high levels of depression.

A variety of item information is shown in Table 4 including item mean and standard deviation information, along with the percentage of missing data for that item. Intra-item information is also provided on Table 4: the scale reliability coefficient and the percentage of cases that are missing at least one item (list-wise) are presented. In terms of missing values, 4.8% of cases were missing at least one of the seven values. Scale reliability was acceptable, $\alpha = .92$, and corrected item-total correlations were greater than .70 and in the correct direction.

Table 4

Scale Characteristics: Depression (N = 2,097)

Item	Mean	S.D.	% Missing [b]	Corrected item-total correlation
I feel low	1.88	.91	1.9	.70
I am lonely	1.84	.94	1.7	.75
I feel sad	2.00	.94	2.2	.81
I am unhappy	1.98	.93	1.9	.78
I feel bad	1.95	.91	2.0	.73
I am depressed	1.85	.95	1.8	.79
I am lonesome	1.75	.91	2.6	.76

[a] Standardized Cronbach's $\alpha = .92$. [b] List-wise missing: 4.8%.

Anxiety.

Anxiety was measured with four Likert-type, self-report, survey items (see Table 5). For each item listed in Table 5, possible responses included "A lot," "Some," "Not Much," and "No," and were assigned a value from 1 to 4 scaled such that a high score was indicative of high levels of anxiety.

A variety of item-level information is shown on Table 5 including item mean and standard deviation information, along with the percentage of missing data for that item. Intra-item information is also provided on Table 5: the scale reliability coefficient and the percentage of cases that are missing at least one item (list-wise) are presented. In terms of missing values, 4.3% of cases were missing at least one of the four values.

Table 5

Scale Characteristics: Anxiety (N = 2,118)

Item	Mean	S.D.	% Missing [b]	Corrected item-total correlation
I get tense	2.28	.94	2.0	.57
I am anxious	2.35	1.01	2.4	.46
I worry	2.69	1.00	2.4	.54
I am nervous	2.26	.95	2.1	.62

[a] Standardized Cronbach's $\alpha = .75$. [b] List-wise missing: 3.9%.

Estimated reliability was marginal ($\alpha = .75$) but acceptable given that there were few items measuring the construct and the fact that Cronbach's Alpha is sensitive to the number of items. Correcting the Cronbach's Alpha for the few number of items using the Spearman-Brown Prophecy Formula yielded an adjusted $\alpha = .82$ for a scale with just 2 more items. While this does not negate the fact that the reliability for this scale was marginal, it does provide some evidence that the number of items was a factor in the estimation of reliability. It is also important to note that corrected item-total correlation coefficients for this scale were all higher than .46 and in the correct direction.

Confirmatory factor analysis was used to (a) assess the measurement model in the Psychological Adjustment construct, and (b) generate the factor scores of use in the cluster analyses.

The construct Psychological Adjustment began as a set of two measures of independent aspects of psychological function: depression and anxiety. The initial model

that was tested was a three factor, second-order model where seven observed variables contributed to the Depression factor, four observed variables contributed to the Anxiety factor, and these two factors contributed to the overall Psychological Adjustment factor. Assessment of this model revealed a strong fit, CFI = .97, NFI = .97, NNFI = .97, RMSEA = .06. Factor loadings for the first-order relationship ranged from .50 to .85 while factor loadings for the second-order factor were .83, and .87, for Depression and Anxiety, respectively.

Regression weights from this final CFA were then used to estimate the second-order (latent) factor score from the observed variables. Thus, for each participant a Psychological Adjustment factor score was calculated.

General Delinquency

General Delinquency was measured with one scale, an index of drug use style, and three additional survey questions. The survey questions included: How many times did you break into a car?; How many times have you been arrested?; How often have you scared somebody with a knife? In each case, responses included: "None," "1-2 times," "3-9 times," and "10 or more times."

The drug use style scale was designed to measure the frequency and intensity of involvement with a variety of drugs. Drugs included in this scale were: alcohol, marijuana (including hashish), inhalants, cocaine, uppers, downers, heroin, PCP, and LSD. Several types of items were used to calculate the scale. Prevalence items were used, including lifetime, annual, and 30 day prevalence. Self-identified "type of user" questions were also used. These questions asked: "What type of [drug] user are you?" Responses

-user," "very light user," "light user," "moderate user," "heavy user,"

"very heavy user." Questions about use patterns were also asked and integrated into the scale. For example, the question "How do you like to sniff [inhalants]" included the

it," "to feel it a little bit," "until I feel it a lot," "until I am really high," "until I am high for several hours."

Once calculated, the scale ranged from "drug dependent," to "never used any drug." A high score indicates more frequent, intense, drug use. The distribution of drug involvement is, of course, skewed toward "never used any drug" (skewness = -1.0). The mean level of Drug Use Style was 22.8, the standard deviation was 10.3; the median was 26.0.

Confirmatory factor analysis (CFA) was used to (a) assess the measurement model in the General Delinquency construct, and (b) generate the factor scores of use in the cluster analyses.

Since the construct General Delinquency began as a set of three survey items and a single scale, the initial model that was tested was a single factor model where four observed variables contributed to the General Delinquency factor. Assessment of this model revealed a strong fit, CFI > .99, NFI = .99, NNFI = .99, RMSEA = .03. Factor loadings ranged from .56 to .66.

Regression weights from this analysis were then used to estimate the (latent) factor score from the observed variables. Thus, for each participant a General Delinquency factor score was calculated.

School Performance

The School Performance measure began as a set of two unique measures of independent aspects of academic performance: one measure was collected from school

records (High School GPA); the other was derived from participants' perceptions of their own academic performance.

Where available, high school grade point average was collected by field research directly from school records. Mean GPA was 1.75, while the standard deviation of the distribution was 1.15; GPA was recorded for all but 5.7% of the respondents in the dataset. The fact that the mean High School GPA was low is predictable given the proportion of the sample who were identified as high school dropouts (see Table 2).

The Perceptions of School Success construct was measured with two Likert-type, self-report, survey items (see Table 6). Possible responses to the item "How are you doing in school?" were "Very Well," "Ok," "Not Too Well," and "Poorly." Possible responses to the item "How good are your grades?" include "Very good," "Ok," "Not

A variety of item-level information is shown on Table 6. Item mean and standard deviation information, along with the percentage of missing data for that item are shown. Scale-level information is also provided on Table 6: the scale reliability coefficient and the percentage of cases that are missing at least one item (list-wise) are presented. In terms of missing values, 3.6% of cases were missing at least one of the four values.

Table 6

Scale Characteristics: Perceptions of School Success (N = 2,124)

Item	Mean	S.D.	% Missing [c]	Corrected Item-Total Correlation
How are you doing in school?	2.86	.87	2.9	.83
How good are your grades?	2.80	.83	2.1	.83

[a] Standardized Cronbach's $\alpha = .90$. [b] List-wise missing: 3.6%.

Scale reliability, as indicated by Cronbach's Alpha coefficient, was acceptable, $\alpha = .90$. Corrected item-total correlation coefficients were each .83 (which simply represents the item correlation since the scale was calculated from two items) and in the correct direction.

Confirmatory factor analysis (CFA) was used to (a) assess the measurement model in the School Performance construct, and (b) generate the factor scores of use in the cluster analyses. The model that was tested was a two-factor, second-order model where two observed variables contributed to the participant's perceptions of performance factor, which then, along with High School GPA (as an single, observed variable) contributed to the overall School Performance factor. The assessment of fit of this model was difficult as there were zero degrees of freedom. Consequently, CFI and NFI were estimated to be 1.00 and NNFI was not calculable as it depends on at least one degree of freedom. Factor loadings for the first-order relationship ranged from.87 to .95 while factor loadings for the second-order factor were .92, and .63, for Perceptions of School Success and High School GPA, respectively.

Regression weights from this final CFA were then used to estimate the second-order (latent) factor score from the observed variables. Thus, for an individual participant a School Performance factor score was calculated.

Construct Characteristics

Some factor-level descriptive statistics, normality statistics, and missing data information is presented in Table 7.

Table 7

Construct-Level Descriptive Statistics: Full Sample

Construct [a]	Range		Skewness	Kurtosis	% Missing [b]
	Low	High			
School Bonding	-2.58	1.60	-0.63	0.15	3.4
School Performance	-2.26	1.76	-0.31	-0.33	9.0
Psychological Adjustment	-1.65	2.68	0.37	-0.47	6.4
General Delinquency	-0.95	2.56	1.04	0.00	5.3

[a] Variables were standardized such that mean = 0.00 and S.D. = 1.00. [b] List-wise missing: 18.9%.

Descriptive statistics (means, standard deviations, ranges) by sex, ethnicity and enrollment status are shown on Table 8.

Table 9 shows the correlations among the factor scores for School Bonding, School Performance, Psychological Adjustment and General Delinquency for the full sample, and dropout sample. Most coefficients were found to be significant (two-tailed, $p<.01$) and in the predicted direction: School Bonding and School Performance were

Table 8.

Construct-Level Descriptive Statistics by Sex, Ethnic Group, and Enrollment Status

			Sex		Ethnicity [a]		Enrollment Status	
		Overall	Male	Female	White [b]	Latino	Dropout	Enrolled
School Bonding	N	2,128	1,194	1,009	794	1,409	1,213	990
	Min.	-2.58	-2.58	-2.58	-2.58	-2.58	-2.58	-2.58
	Max.	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	M	0.00	-0.05	0.06	-0.07	0.04	-0.30	0.36
	SD	1.00	1.01	0.99	1.05	0.97	1.05	0.81
School Performance	N	2,005	1,194	1,009	794	1,409	1,213	990
	Min.	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.22
	Max.	1.76	1.76	1.75	1.74	1.76	1.60	1.76
	M	0.00	-0.08	0.09	0.06	-0.03	-0.48	0.54
	SD	1.00	1.00	0.99	1.06	0.96	0.89	0.83

Table 8 (continued)

			Sex		Ethnicity [a]		Enrollment Status	
		Overall	Male	Female	White [b]	Latino	Dropout	Enrolled
Psychological Adjustment	N	2,063	1,194	1,009	794	1,409	1,213	990
	Min.	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65	-1.65
	Max.	2.68	2.68	2.68	2.68	2.68	2.68	2.68
	M	0.00	-0.16	0.19	0.07	-0.04	0.05	-0.06
	SD	1.00	0.94	1.04	1.01	0.99	1.03	0.95
General Delinquency	N	2,086	1,194	1,009	794	1,409	1,213	990
	Min.	-0.95	-0.95	-0.95	-0.95	-0.95	-0.95	-0.95
	Max.	2.56	2.56	2.56	2.56	2.56	2.56	2.56
	M	0.00	0.24	-0.28	-0.06	0.03	0.33	-0.39
	SD	1.00	1.08	0.81	0.95	1.03	1.05	0.77

[a] Self identified. [b] White non-Hispanic.

highly correlated; Psychological Adjustment was moderately correlated to both School Performance and School Bonding; General Delinquency was negatively correlated with School Bonding, School Performance and Psychological Adjustment. Psychological Adjustment was not statistically related to either School Bonding, nor General Delinquency for the High School Dropout sample.

Table 9

Construct-Level Correlation Matrix for Full and Dropout Samples

	1	2	3	4
Full Sample (n = 2,086)				
1. School Bonding	—			
2. School Performance	+.57**	—		
3. Psychological Adjustment	+.09**	+.10**	—	
4. General Delinquency	-.29**	-.36**	-.08**	—
Dropout Sample (n = 925)				
1. School Bonding	—			
2. School Performance	+.48**	—		
3. Psychological Adjustment	+.01	+.08*	—	
4. General Delinquency	-.14**	-.15**	-.05	—

* $p < .05$, two tails; ** $p < .01$, two tails

Predictive Validity

Logistic regression was used to assess how well the four constructs (School Bonding, School Performance, Psychological Adjustment, and General Delinquency) predicted enrollment status (high school dropout / current high school student). Table 10 shows the results of the logistic regression analysis.

Table 10

Logistic Regression: Predicting Enrollment Status with the Derived Factors

Variable	OR	95% CI		B	B (S.E.)	DF	p
		LL	UL				
School Bonding	1.22	1.07	1.40	0.20	0.07	1	0.01
School Performance	3.31	2.78	3.96	1.20	0.09	1	0.00
Psychological Adjustment	0.93	0.83	1.05	-0.07	0.06	1	0.22
General Delinquency	0.54	0.47	0.62	-0.62	0.07	1	0.00
Constant				-0.22	0.06	1	0.00

Note. OR = odds ratio; LL = lower limit of the 95% confidence interval around the odds ratio; UL = upper limit of the 95% confidence interval around the odds ratio.

Results of the logistic regression analysis revealed statistically significant ($p < .05$) parameter estimates for three of the four constructs. The fourth predictor, Psychological Adjustment, was not statistically significant at $p = .05$.

Not surprisingly, the strongest predictor of enrollment status was School Performance, followed by General Delinquency, and School Bonding. This analysis showed that unit change in School Performance increased the odds that a respondent was a High School Dropout 3.31 times. Likewise, unit change in School Bonding was associated with an increase of 1.22 in odds that a respondent was a High School Dropout. The same was true of General Delinquency; high delinquency predicted dropout status as unit change in General Delinquency increased the odds of being a high school dropout 1.85 (1 / .54).

Note that this assessment of the predictive validity of these four measures does not have direct bearing on the central thesis of this project: that high school dropouts can

be statistically classified into unique groups. It was possible that a particular construct would not be predictive of enrollment status but would still be useful for sub-classifying high school dropouts into distinct groups. This analysis is presented to show the extent to which these constructs could be used to predict enrollment status.

Procedures

The data were collected during the 1989-1990, 1990-1991, 1993-1994 and 1994-1995 school years. All survey data were collected during school hours or by appointment. The surveys generally took 1 to 1.5 hours to complete. The data were collected at 3 sites: a large metropolitan city, a mid-sized town, and a small rural town. Each site was located in the western United States.

Participants who were identified as school dropouts were, to an extent, a sample of convenience: school district records were used to identify school dropouts then attempts were made to contact the adolescent and recruit him or her for participation. In cases where contact was difficult, a variety of follow-up techniques were used: parents, family members and friends were contacted in an effort to find the potential respondent. Contact attempts were made by telephone and mail.

Once identified as a school dropout, subsequently contacted, and their participation secured, participants were asked to complete the paper-and-pencil survey. First, however, participants were assured of confidentially and were asked to sign a consent to participate agreement outlining the rights and responsibilities of participation; parent permission was obtained for respondents under the age of 18. The participants were informed that the survey itself, and answers to the questions included on the survey, were protected by the U.S. government's issue of a Certificate of Confidentiality that

guaranteed the legal confidentiality of all survey responses. Respondents were asked to meet research personnel at a school or in another public building to complete the survey. Surveys were identified by number only. Upon completion of the survey and in the presence of the field researcher, the survey was then sealed in an envelope and immediately mailed for data entry and processing.

Once a dropout respondent was recruited, a randomly selected in-school youth was selected in an effort to create an enrolled comparison group. Enrolled participants were selected to match a dropout respondent by ethnic group identification, grade in school, and sex such that the groups (enrolled, high school dropout) did not differ in important demographic characteristics.

Results

The results of the data analyses presented herein are in an order that mirrors the analyses: measurement construction (presented in the Method section), cluster analysis, cluster validation, and cluster solution description. Each stage builds upon the last and represents a critical aspect of the "principled argument" (Abelson, 1995) that forms the essence of this dissertation.

Cluster Analysis

All analyses conducted in this section, and subsequent sections, were conducted with the dropout sample. Table 11 provides the breakdown of this sample by sex, and ethnic group.

Table 11

Sample Size by Sex and Ethnic Group for the Full High School Dropout Sample

Group	n	%
Sex		
Male	524	56.6
Female	401	43.4
Ethnicity		
White [a]	354	38.3
Latino	571	61.7
Total	925	

[a] non-Hispanic.

Cluster analysis is a varied set of analytic techniques that are used to classify *objects* into groups based on a set of *elements*. Objects can be individual cases or variables. Elements can be any characteristic of the objects. For the current study, the focus was on the clustering of adolescents into groups based on their scores on a set of elements which were standardized factor scores. The factor scores included: (a) School Bonding, (b) School Performance, (c) Psychological Adjustment, and (d) General Delinquency. Selection of the elements is critical, as the elements will alone determine cluster membership for a given object. Elements were selected based on the theoretical perspective that is being evaluated.

The cluster analyses proceeded through two major stages. First, all high school dropouts were cluster analyzed in an attempted to derive a single cluster solution for all high school dropouts. Then, males, females, white (non-Hispanic), and Hispanic high school dropouts were clustered independently such that cluster solutions could be compared to determine if a single cluster solution would sufficiently explain the variation or if multiple solutions (by sex and/or ethnic group) were required.

Cluster analysis, in this case K-Means cluster analysis, was a three step process. First, initial cluster centers were identified; it is from here that the initial classification took place. Thus, K cases with well separated cluster centers (as determined by distance (D)) were selected as temporary estimates of the K cluster centers. Then, each case was evaluated, in terms of its distance (D) from each of the cluster centers, and then classified into a cluster according to which cluster was least distant (in terms of D). Note that while a many distance measures have been developed Euclidean distance has remained the most popular due to its ease of interpretation and, when variables to be clustered have

been standardized, its stability across a variety of data types and clustering situations (Everitt, 1993). Euclidean distance between two data-points (x, y) is given by

$$D(x,y) = \sqrt{\left(\sum (X_i - Y_i)^2\right)}$$

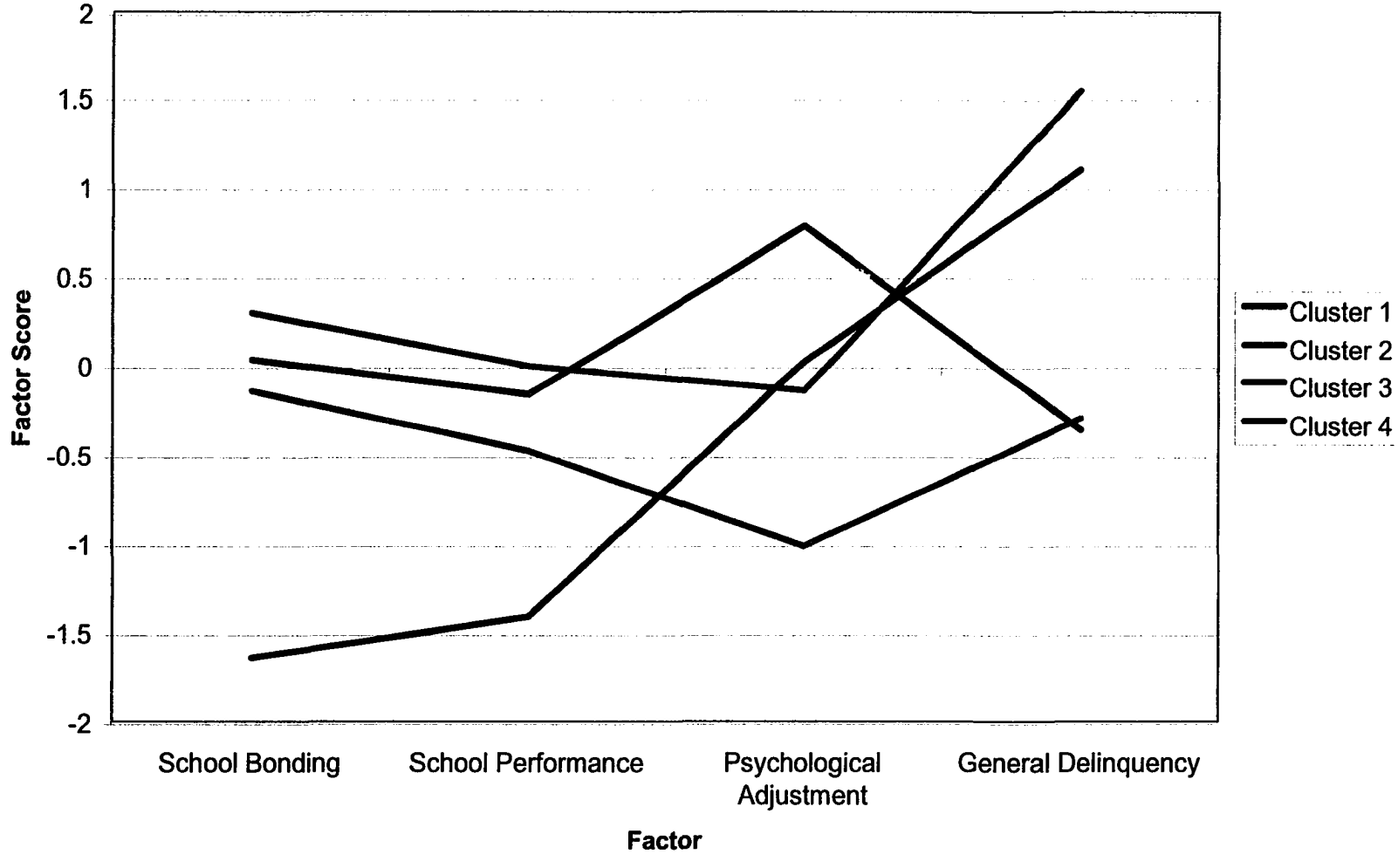
The second step in the process involves updating the cluster centers based on the new information provided by the newly classified cases. Thus for each iteration, the solution resulted in an update to the previous estimate. These two steps were then repeated until little change (based on specified criteria) occurred in the estimate of the cluster centers from one iteration to the next.

Cluster Solution: Full High School Dropout Sample

There were 925 high school dropouts with valid values in all four factor scores (see Table 11). Cluster analysis was conducted in an attempt to classify these cases into meaningful sub-groups. Initially, a four cluster solution was generated as four unique types of high school dropouts were hypothesized. The four cluster solution can be seen in Figure 1. As shown in Figure 1, the four cluster solution revealed two clusters for which dropouts scored highly on General Delinquency, but differed greatly on School Bonding and School Performance. Thus, this initial four cluster solution revealed an unexpected result: two highly delinquent clusters where one was hypothesized. As a consequence, a five cluster solution was generated in an effort to explore the possibility that the next solution would provide evidence for all four hypothesized clusters. This is a standard technique in cluster analysis as several authors have investigated methods of determining the appropriate number of groups (Mojena, 1977; Milligan & Cooper, 1987). Milligan and Cooper (1985) described the stopping point in cluster analysis (also known as the "number of groups" problem) as one of the central issues in cluster analysis.

Figure 1

The Four Cluster Solution



For the purpose of this analysis a non-empirical approach was selected as a specific typology was proposed.

Figure 2 and Table 12 show the final, five cluster solution. Table 12 shows the mean, standard deviation, 95% confidence interval for the mean for each cluster.

Analysis of variance revealed a significant main effects for the clusters on School Bonding ($F(4,920) = 292.01$, $MS = 187.9$, $p < .001$), School Performance ($F(4,920) = 113.66$, $MS = 59.6$, $p < .001$), Psychological Adjustment ($F(4,920) = 215.03$, $MS = 117.3$, $p < .001$), and General Delinquency ($F(4,920) = 563.19$, $MS = 183.26$, $p < .001$). Tukey HSD post-hoc tests revealed several statistically significant differences among the clusters. Specifically, all clusters were significantly different from all other clusters in School Bonding at the $p<.01$ level. In addition, all but one pair of clusters were significantly different from each other in School Performance; clusters 2 and 4 were not. All but one pair of clusters were significantly different from each other in Psychological Adjustment; clusters 2 and 5 were not statistically distinct at á = .05 ($p = .08$). For General Delinquency, all pairs of clusters were different save two. Neither clusters 1 and 4, nor 3 and 5, were statistically significantly different on the General Delinquency factor.

Figure 2

The Five Cluster Solution

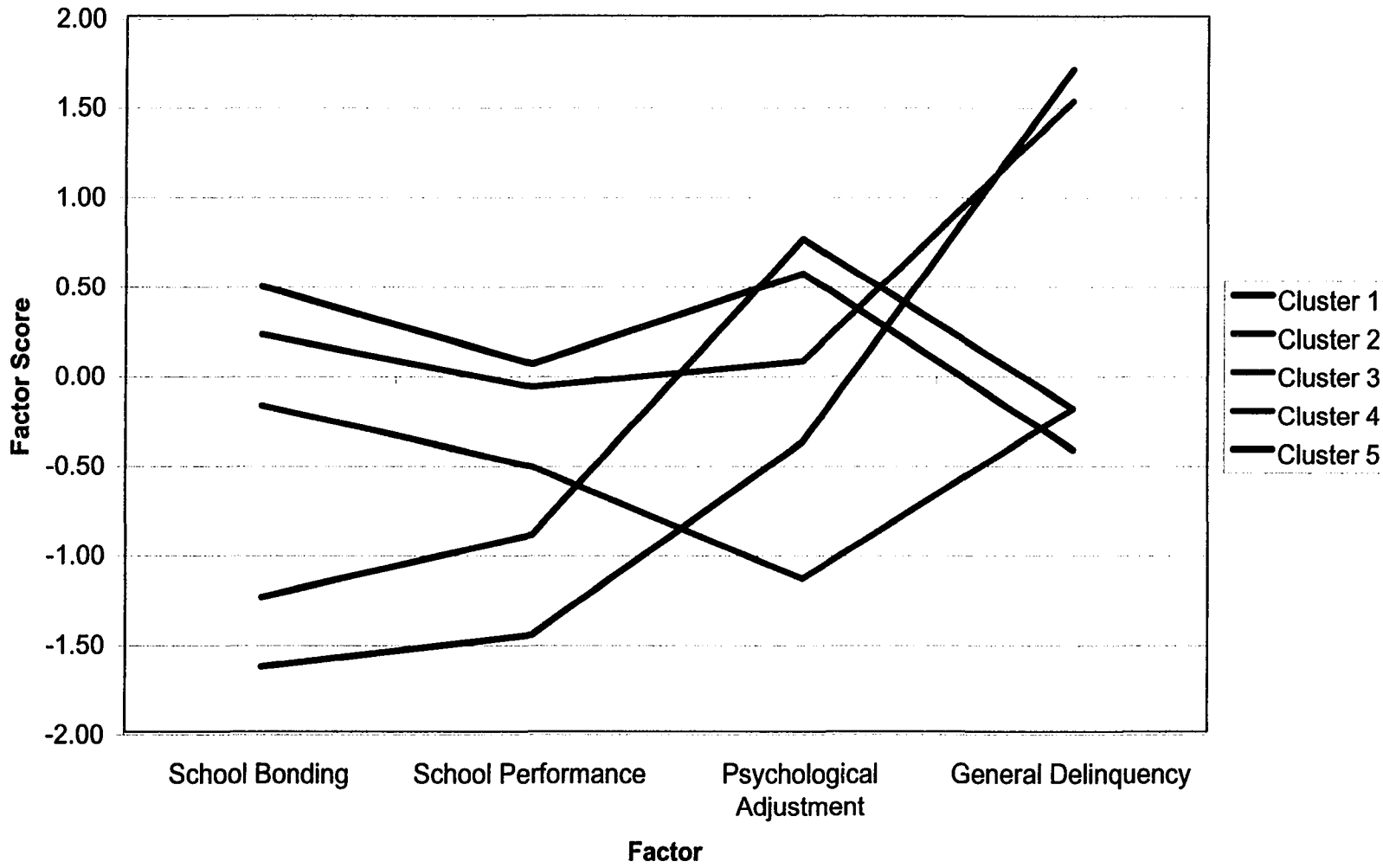


Table 12

The Cluster Solution: Descriptive Statistics, Analysis of Variance and Post-Hoc Tests

				95% CI	
Cluster	N	M	SD	LL	UL
		School Bonding			
1	117	-1.64	0.77	-1.78	-1.50
2	230	0.49	0.59	0.41	0.56
3	217	-0.18	0.77	-0.28	-0.07
4	196	0.22	0.59	0.13	0.30
5	165	-1.25	0.74	-1.36	-1.14
Total	925	-0.30	1.04	-0.37	-0.24
		School Performance			
1	117	-1.46	0.72	-1.59	-1.33
2	230	0.05	0.61	-0.03	0.13
3	217	-0.52	0.81	-0.63	-0.41
4	196	-0.08	0.67	-0.17	0.02
5	165	-0.90	0.82	-1.03	-0.77
Total	925	-0.47	0.88	-0.53	-0.41

Cluster	N	M	SD	95% CI LL	95% CI UL
Psychological Adjustment					
1	117	-0.38	1.03	-0.57	-0.20
2	230	0.56	0.61	0.48	0.64
3	217	-1.15	0.61	-1.23	-1.07
4	196	0.07	0.86	-0.05	0.19
5	165	0.75	0.64	0.65	0.85
Total	925	-0.03	1.03	-0.10	0.04
General Delinquency					
1	117	1.70	0.71	1.57	1.83
2	230	-0.43	0.45	-0.49	-0.37
3	217	-0.20	0.58	-0.27	-0.12
4	196	1.52	0.59	1.44	1.60
5	165	-0.19	0.56	-0.28	-0.11
Total	925	0.35	1.06	0.28	0.42

Logistic regression was used to determine whether sex or ethnic group were predictive of cluster membership. Table 13 shows the results of the logistic regression analysis for each cluster.

While accounting for ethnicity, sex was predictive of cluster 1, 2, 3 and 4 membership (see Table 13). Cluster 1 members were 1.46 times more likely to be male. Cluster 2 members were 1.43 times more likely to be female. Cluster 3 members were

1.61 times more likely to be female and cluster 4 members were 1.85 times more likely to be male. Ethnicity was not predictive of cluster membership for any of the five clusters.

Table 13

Logistic Regression: Predicting Cluster Membership with Sex and Ethnicity

		95% CI				
Variable	OR	LL	UL	B	B (S.E.)	p
Cluster 1						
Ethnicity (W:MA)	1.00	0.82	1.22	0.00	0.10	0.98
Sex (M:F)	1.46	1.18	1.81	0.38	0.11	0.00
Constant				-2.03	0.11	
Cluster 2						
Ethnicity (W:MA)	0.91	0.78	1.07	-0.09	0.08	0.26
Sex (M:F)	0.70	0.60	0.82	-0.36	0.08	0.00
Constant				-1.11	0.08	
Cluster 3						
Ethnicity (W:MA)	1.05	0.90	1.23	0.05	0.08	0.57
Sex (M:F)	0.62	0.53	0.72	-0.48	0.08	0.00
Constant				-1.17	0.08	
Cluster 4						
Ethnicity (W:MA)	1.01	0.85	1.21	0.01	0.09	0.92
Sex (M:F)	1.85	1.56	2.22	0.62	0.09	0.00
Constant				-1.50	0.10	
		95% CI				

Variable	OR	LL	UL	B	B (S.E.)	p
Cluster 5						
Ethnicity (W:MA)	1.05	0.88	1.25	0.05	0.09	0.57
Sex (M:F)	1.16	0.97	1.39	0.15	0.09	0.10
Constant				-1.54	0.09	

Note: OR = odds ratio; LL = lower limit of the 95% confidence interval around the odds ratio; UL = upper limit of the 95% confidence interval around the odds ratio.

Cluster Analysis of Sub-Groups

Separate cluster analyses were conducted on subgroups of the overall sample to determine if the cluster structure of the dropout sample as a ole would be replicated. Males, females, White (non-Hispanic) and Latino (Mexican American) High School Dropouts were cluster analyzed. In each case, a five cluster solution was generated.

Once the cluster solutions were generated the overall fit between the subgroup cluster solutions and the overall cluster solution was evaluated. For each cluster, a distance matrix was calculated to determine the minimal distance between each cluster in each sub-group solution and each cluster in the overall solution. For each subgroup, the cluster that was most proximal a cluster from the overall solution was identified as belonging to that solution. Thus, if the third cluster extracted in the male sample was closest to the second extracted in the overall sample, then it was identified with that cluster. Figures 3a through 3e show the subgroup cluster solutions mapped onto the overall cluster solution for each of the five final clusters.

Mean factor scores for each solution, starting with the overall solution, are shown on Table 14.

Table 14

Sub-Group Cluster Solutions: Mean Factor Scores

Solution	Factor	Cluster 1	2	3	4	5
Overall		(n=117)	(n=230)	(n=217)	(n=196)	(n=165)
	School Bonding	-1.64	0.49	-0.18	0.22	-1.25
	School Performance	-1.46	0.05	-0.52	-0.08	-0.90
	Psychological Adjustment	-0.38	0.56	-1.15	0.07	0.75
	General Delinquency	1.70	-0.43	-0.20	1.52	-0.19
Male		(n=90)	(n=127)	(n=99)	(n=112)	(n=96)
	School Bonding	-1.50	0.56	-0.22	0.20	-1.24
	School Performance	-1.47	-0.03	-0.50	-0.11	-0.94
	Psychological Adjustment	-0.06	0.79	-0.79	-0.27	0.92
	General Delinquency	1.74	0.13	-0.23	1.78	-0.11
Female		(n=40)	(n=128)	(n=111)	(n=52)	(n=70)
	School Bonding	-1.72	0.43	-0.04	0.21	-1.33
	School Performance	-1.55	0.15	-0.43	-0.02	-0.80
	Psychological Adjustment	-1.25	0.49	-1.19	-0.21	0.41
	General Delinquency	1.08	-0.53	-0.33	1.38	-0.34

Solution	Factor	Cluster 1	2	3	4	5
White		(n=49)	(n=78)	(n=78)	(n=72)	(n=77)
	School Bonding	-1.92	0.44	-0.09	-0.01	-0.94
	School Performance	-1.52	0.26	-0.30	0.01	-0.96
	Psychological Adjustment	-0.92	0.63	-1.11	0.14	0.62
	General Delinquency	0.93	-0.34	-0.27	1.68	-0.19
Latino		(n=88)	(n=170)	(n=99)	(n=120)	(n=94)
	School Bonding	-1.58	0.02	0.46	0.30	-0.94
	School Performance	-1.35	-0.30	0.15	-0.10	-1.26
	Psychological Adjustment	0.53	0.83	-0.88	-0.19	-0.87
	General Delinquency	1.41	-0.36	-0.40	1.60	0.04

Note: Each cluster solution was sorted such that a single column contains clusters for which the distance from a cluster in the overall solution was minimized.

Overall, an analysis of the subgroup solutions, as compared to the overall solution, produced some evidence that the cluster structure revealed in the overall solution adequately describes the solutions for the sub-populations. If the cluster structure was unique by sex, or by ethnicity, then the cluster mapping would not have revealed such close fit between the subgroup cluster analyses solutions and the overall cluster analysis solution.

There were, however, some important differences within the sub-group solutions, particularly for the Latino solution. The cluster analysis with the Latino sub-group revealed good fit (as indicated by the Euclidean distance from the overall solution) for all but one cluster (cluster five; shown in Figure 3e). The cluster five solution for the Latino

subgroup did not fit well in terms of its score on Psychological Adjustment. That is, while the distances were minimal in terms of School Bonding, School Performance and General Delinquency, the cluster from the Latino solution did not fit well on the Psychological Adjustment factor.

Cluster analysis by sex and ethnicity also revealed an interesting pattern in cluster one (see Figure 3a): the fit around School Bonding, School Performance and General Delinquency by sex and ethnic group, around the Psychological Adjustment sub-scale shows that Females and Whites score well below the mean while Males score near the mean and Latinos one-half of one standard deviation above the mean.

Cluster Solution Validation

It is crucial that cluster validation occur. Everitt (1993) noted that "...any classification is a division of the objects or individuals into groups based on a set of rules—it is neither true nor false and should be judged largely on the usefulness of the results" (p. 4). He further observes that the interpretation of a cluster analysis is "often dominated by personal intuition and insight" (pp. 142). However, several authors (Lorr, 1982; Everitt, 1993; Blashfield & Aldenderfer, 1988) describe techniques that can be used to validate a cluster structure. Lorr (1982) offered three general methods to assess the validity of the latent structure generated by a cluster analysis: the use of an external criterion; the use of an internal criterion; and the ability to replicate the cluster structure using other sources of data. The use of external criterion for validation takes advantage of variables that were not included in the original cluster procedures, to determine if a *priori* notions of how such variables would behave are confirmed. The use of internal criterion

Figure 3a

Cluster One Profiles, by Sex, and Ethnic Group

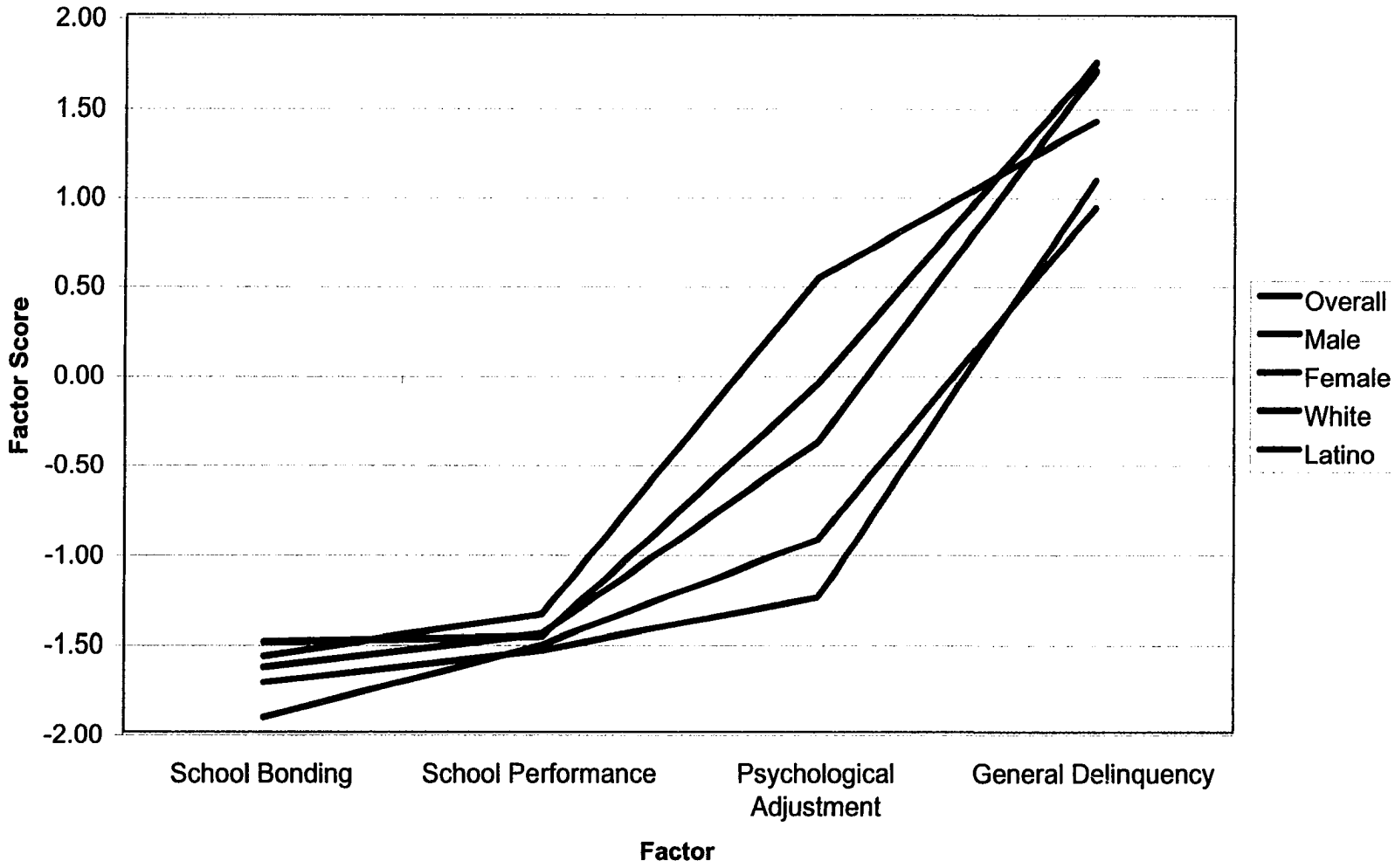


Figure 3b

Cluster Two Profiles, by Sex, and Ethnic Group

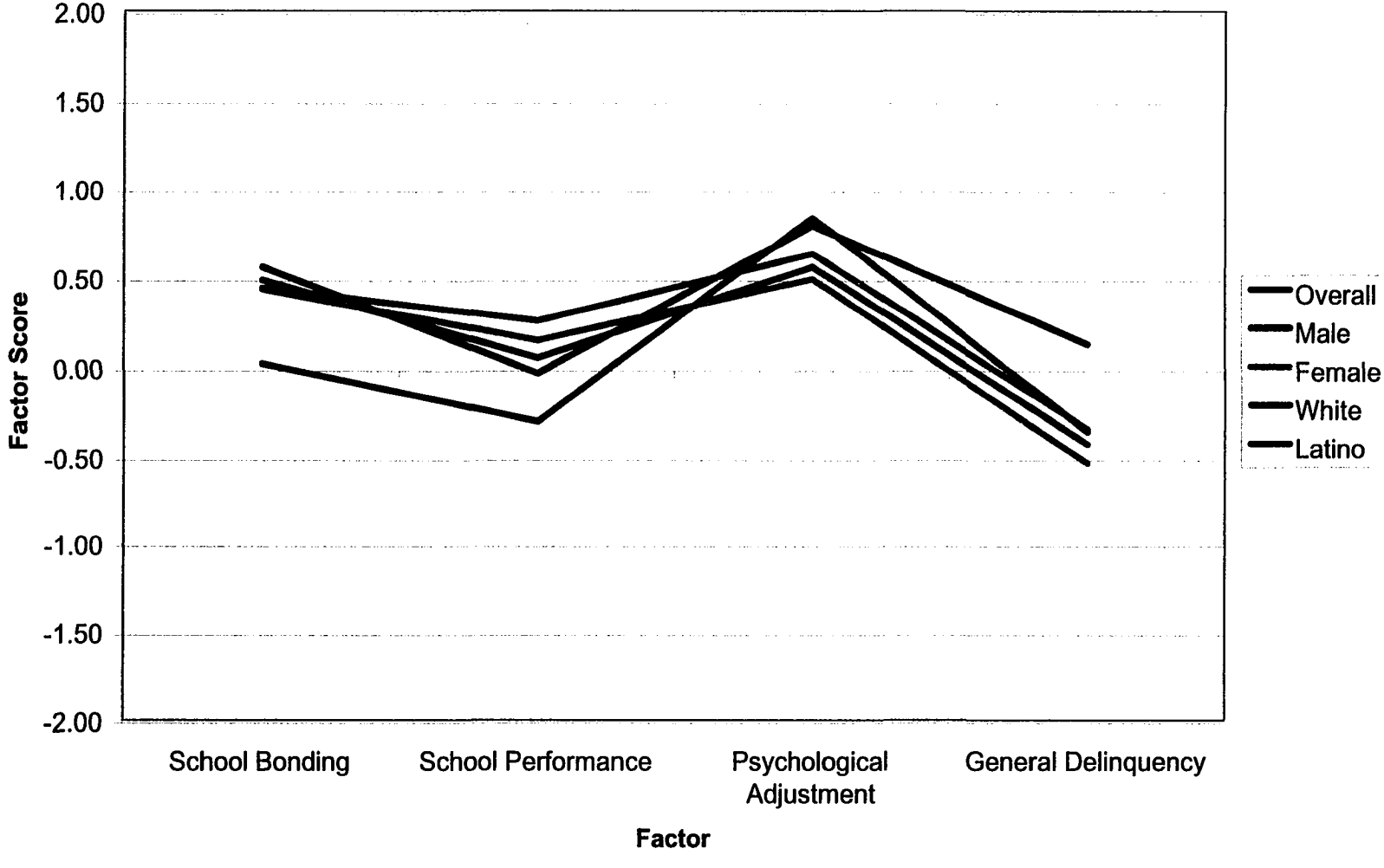


Figure 3c

Cluster Three Profiles, by Sex, and Ethnic Group

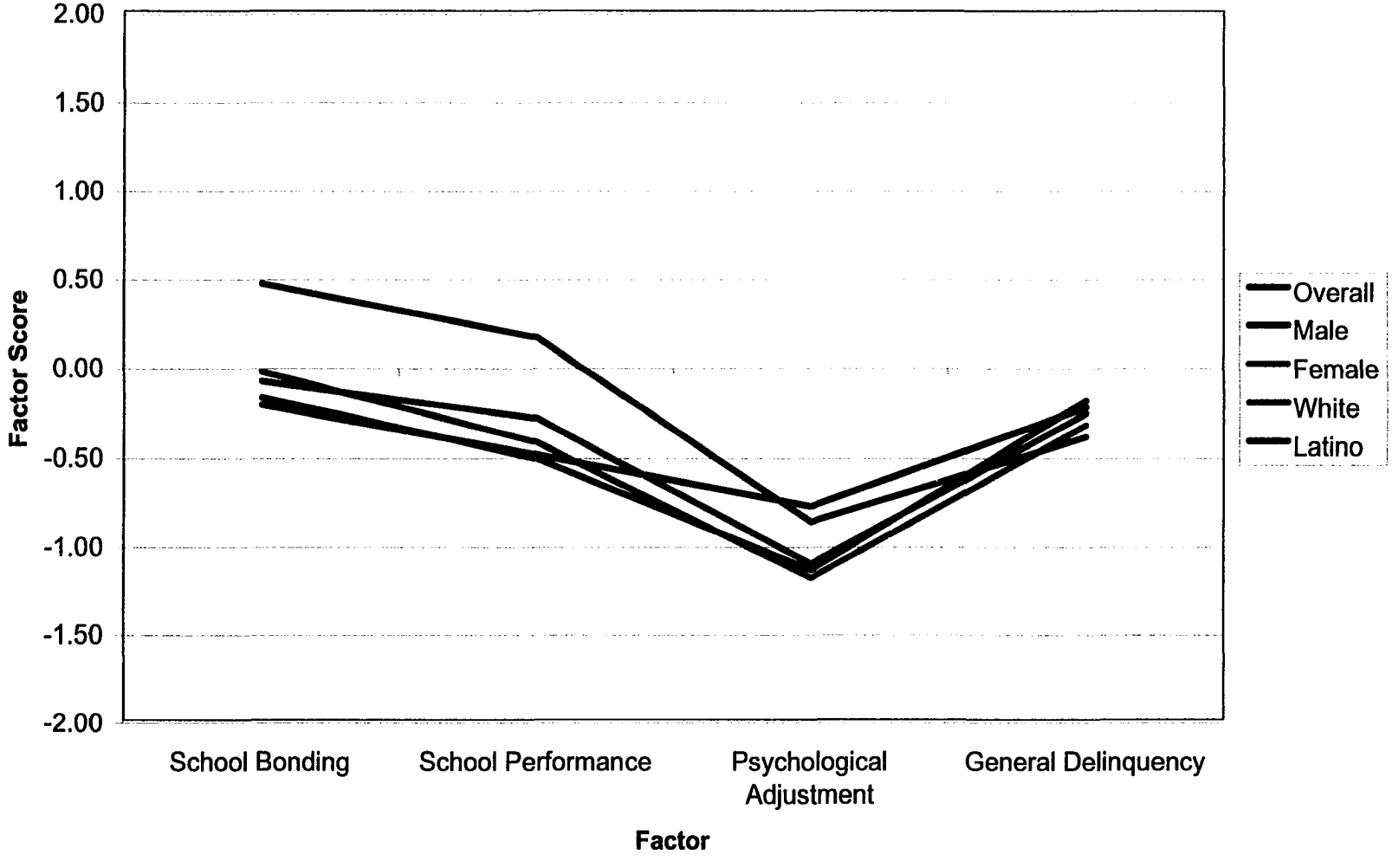


Figure 3d

Cluster Four Profiles, by Sex, and Ethnic Group

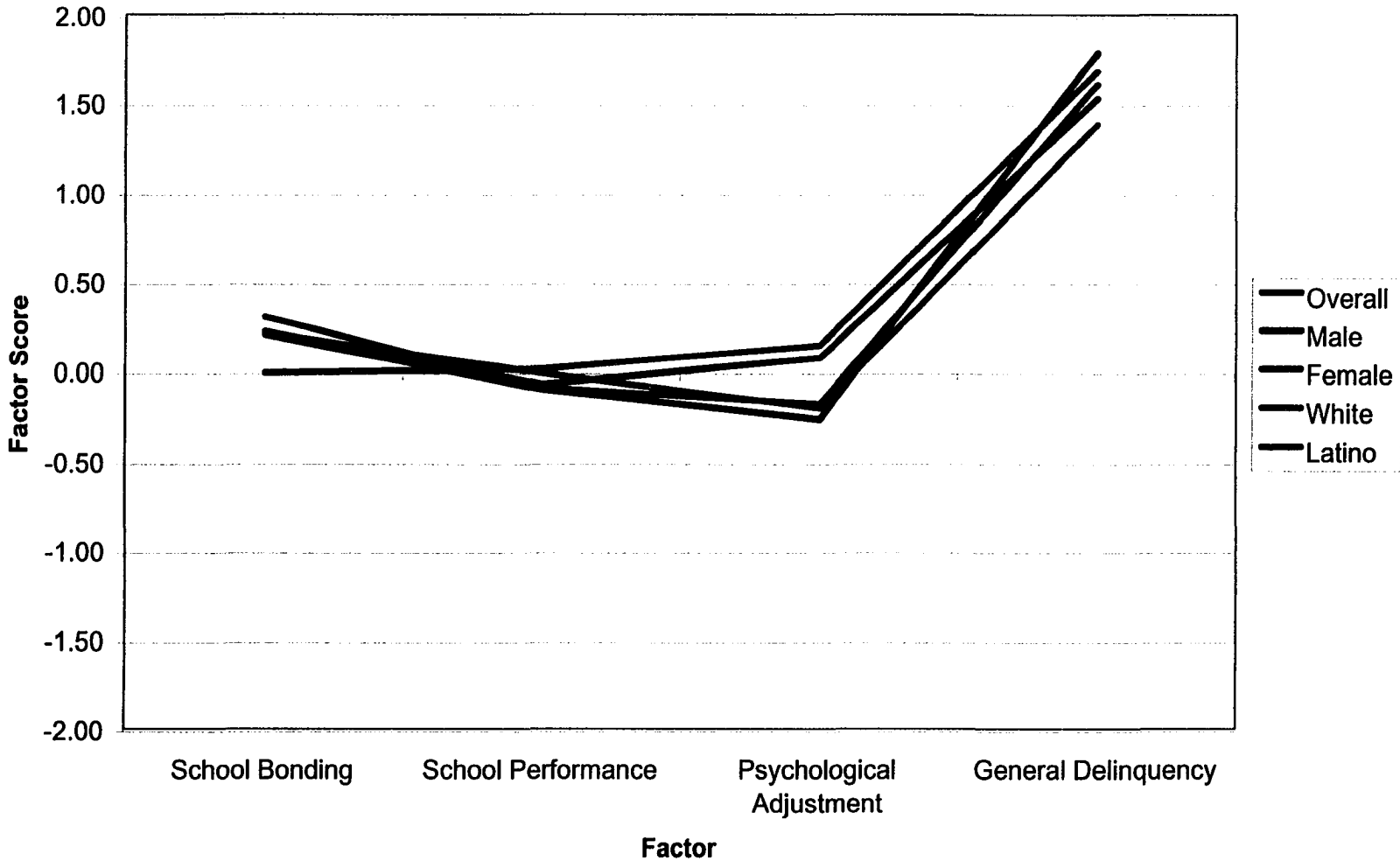
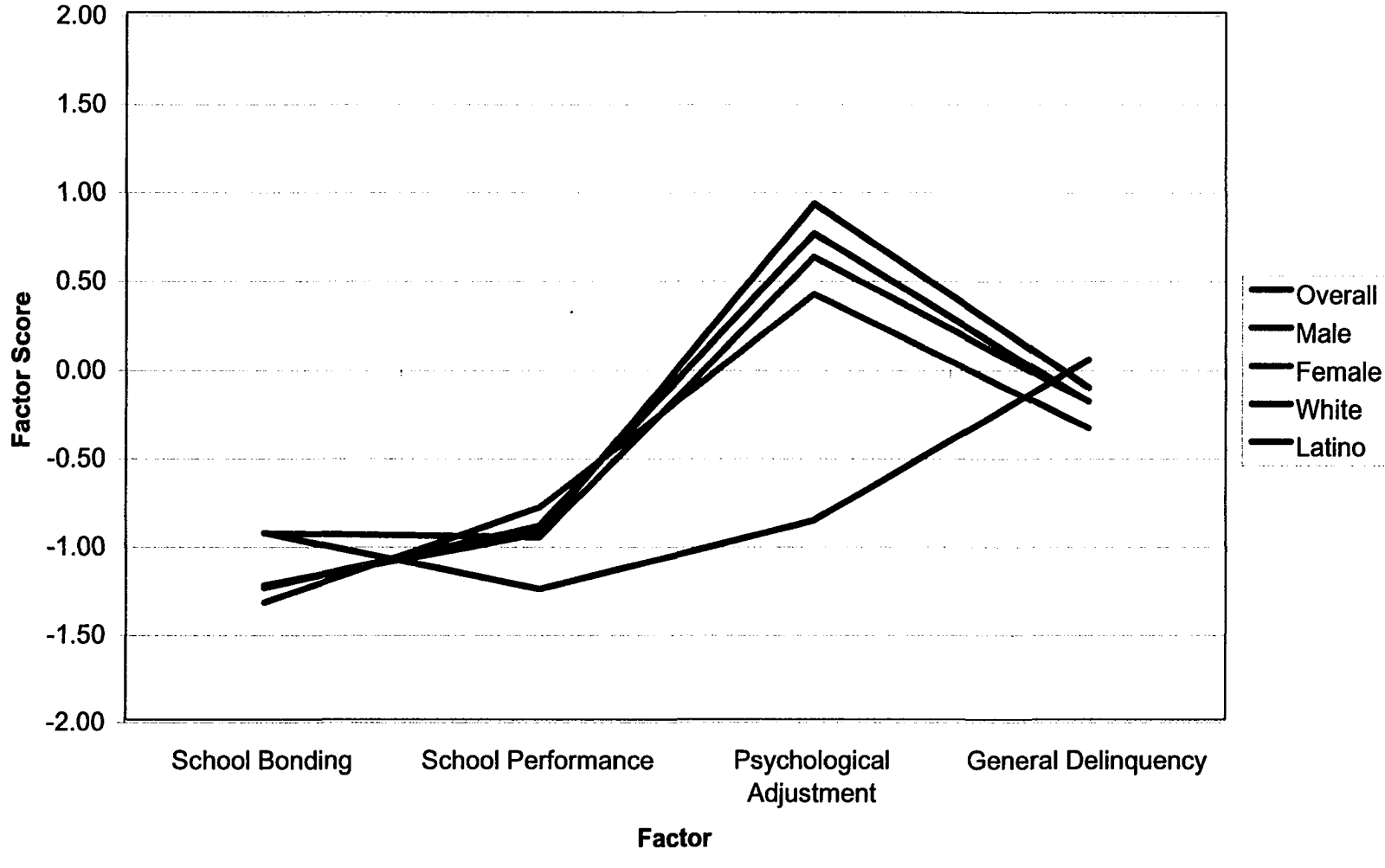


Figure 3e

Cluster Five Profiles, by Sex, and Ethnic Group



includes evidence of fit of the data to the obtained cluster solution. Finally, replication of a solution across data sets is also an important method of verifying a cluster solution. While some evidence for internal validation has been presented herein, external data for validation was also available. Specifically, self-reported reasons for leaving school were analyzed by cluster in an effort to provide evidence that the cluster solution was reflective of the reality of these participants' lives.

Table 15 shows many of the reasons that were identified as the "primary reasons that people dropout of school" and presented to study participants. Table 15 is organized by cluster, and the percentage of cluster members who identified a reason as "very

scale of "not important," "kind of important," and "very important," is shown.

Table 15

Percentage of Cluster Members Identifying Specific Reasons for Leaving

Reason Cited	Cluster				
	1	2	3	4	5
Kicked out	49.3	30.0	42.3	31.3	31.9
School was too hard	29.7	8.0	15.7	7.3	11.1
My grades were bad	51.4	26.8	40.0	29.7	40.7
I hated school	64.0	12.7	25.4	24.3	45.3
I did not like the teachers	56.9	12.6	20.3	12.7	28.6
Teachers did not like me	22.2	3.6	9.0	6.4	12.2
To get married	5.5	7.1	8.3	4.5	10.0
To have a baby	10.8	23.2	17.4	6.4	15.6

Reason Cited	Cluster				
	1	2	3	4	5
To make money: family	12.3	20.5	19.7	14.8	20.9
To make money: self	38.4	32.4	32.8	35.5	35.2
I was sick	13.5	14.4	17.2	7.4	6.7
I was unhappy	24.7	11.6	28.9	14.7	19.8
I was angry	23.3	4.5	15.6	13.8	13.3
I was lonely	13.5	1.8	16.3	7.3	2.2

Note. Percentage indicating that a reason was "very important" is shown.

A substantial proportion of members of all clusters reported that being kicked out was an important, or very important, reason for their leaving school. This percentage ranged from 30.0% for cluster 2 members to nearly half, 49.3%, for cluster 1 members.

Two school-performance related reasons for leaving, "School was hard" and "My grades were bad," were cited most often by cluster 1 members. Although for all five clusters, at least 25% (40.0% for cluster 3 and 5 members) indicated that their bad grades was an important reason for leaving.

Three school-bonding related reasons for leaving, "I hated school," "I did not like the teachers," and "The teachers did not like me," were cited most often by those participants classified as cluster 1 members. It is also important to note that cluster 2 members cited these reason less often than other clusters.

Four reasons were identified as reasons unrelated to school. They included: To get married," "To have a baby," "To make money for my family," and "To make money for myself." There was no clear pattern across all of these reasons. More cluster 5 members

cited getting married than any other cluster while more cluster 2 members cited having a baby than any other cluster. In terms of making money, both reasons were about equally cited by members of all clusters.

Four emotional and health related reasons were also provided: "I was sick," "I was unhappy," "I was angry," and "I was lonely." With one exception, a higher percentage of cluster 3 members cited these reasons than any other cluster. The one exception, "I was angry," was reported by a higher percentage of cluster 1 members.

Discussion

While it is easy to sort adolescents into two categories, those in school and those not in school, it is insufficient to do so because there are finer and more accurate discriminations that can, and should, be made. Hopefully, a more attenuated classification system would increase our understanding of the dropout phenomena and, in turn, help prevent it. Rumberger (1987) acknowledged this problem, noting:

> A comprehensive model of dropout behavior should address the notion that there are different types of dropouts who leave school for different reasons. That there is no "typical" dropout. A poor, urban black may drop out of school because he is doing badly, his school is understaffed, and he believes his economic prospects are poor whether or not he finishes school. A suburban, middle-class white may drop out of school because he is bored although doing reasonably well in school, he wants to spend some time with his friends, and he knows he can finish school later on at the community college. The causes and the nature of dropping out are very different for these two types of teenagers. Such differences should be

explored further and used to develop separate models of dropping out for different types of students. (p. 112).

One of the primary problems with imprecise discrimination is that it becomes easy to build negative, and often inaccurate, stereotypes (e.g. all dropouts are losers). While the notion that the high school dropout is incapable is pervasive, Fine and colleagues (Fine, 1986; Fine and Rosenberg, 1983) reject this notion and argue that many dropouts do not conform to this stereotype.

The primary goal of this research was show that distinct, homogeneous, sub-types of high school dropouts exist and could be uncovered via cluster analytic procedures. It was generally hypothesized that four sub-types of dropouts would emerge from these analyses. High levels of delinquent behavior such as alcohol and drug involvement, criminal activity, and/or violence would characterize the Delinquent Type of high school dropout. Feelings of extreme alienation from schools, teachers and the education system would identify the Actively Phased-Out (Alienated) Type of dropout. The Passively Phased-Out Type of dropout would be identified by diminished academic skills and disruption in the traditional life-course. Finally, significant levels of psychological distress would identify the Troubled Type of dropout.

The primary motives behind this research included: (a) providing evidence to improve the accuracy of operational definitions used in the study of the high school dropout phenomena, (b) to use quantitative data to bolster the qualitative research that has shown that dropouts are not a homogenous population, and finally (c) to identify specific sub-groups of high school dropouts such that prevention and intervention efforts could be better targeted.

Summary of the Results

Measurement Construction

A set of four measures was constructed: School Bonding, School Performance, Psychological Adjustment, and General Delinquency.

School Bonding was measured with four survey questions. With one exception, all aspects of the measure's construction met criteria for inclusion in the further analysis. That is, corrected item-total correlations, Cronbach's alpha reliability, CFA factor loadings and two of the three measures of goodness-of-fit all met required criteria for inclusion in the cluster analyses.

Psychological Adjustment was measured with two subscales, Anxiety and Depression. It was necessary to first confirm the measurement characteristics of the subscales before the overall construct, Psychological Adjustment, could be evaluated. For both subscales good measurement characteristics, as defined by standard measures (corrected item-total correlation, alpha reliability) and CFA factors loadings and goodness-of-fit indices, were revealed (see Tables 4 and 5).

School Performance was measured with two variables: High School grade point average and a two-item scale designed to measure participant perceptions of school success. The standard criterion for evaluating measurement characteristics do not apply to GPA, but the perceptions of school success scale was evaluated for measurement quality. Across all criteria, School Performance appeared to be measured well.

General Delinquency was measured with a drug use style scale and three measures of specific delinquent behaviors. The drug use style scale was calculated using a variety of drug use survey questions and is established in the literature (Chavez,

Edwards & Oetting, 1989; Chavez, Oetting & Swaim, 1994). General Delinquency met all criteria for solid measurement characteristics.

Construct Characteristics

It was clear that the four constructs were highly inter-correlated. Correlation coefficients, all of which were statistically significant (that is, too large to be considered randomly different than .00), ranged from .57 to -.36. As would be expected, School Performance and School Bonding were highly correlated in both the overall ($r = .57$), and dropout ($r = .48$) samples. The relationship between General Delinquency and all of the other factors was negative.

It was also clear that factor scores varied on enrollment status (in-school, high school dropout). In fact, logistic regression results revealed that three of the four factors were predictive of enrollment status. This analysis also revealed School Performance to be the strongest predictor of enrollment status. It is important to note that Psychological Adjustment was not a statistically significant predictor of enrollment status at the $\alpha=.05$ level. Thus, the relationship between enrollment status and psychological adjustment was not strong enough when entered into a model that includes School Bonding, School Performance, and General Delinquency. Surely the argument could be made to remove Psychological Adjustment from the dataset when attempting to detect sub-types of dropouts. However, this is precisely the reason that cluster analytic procedures can uncover aspects of a dataset that cannot be as easily uncovered using linear modeling: it is possible that for a small sub-group of cases the relationship between Psychological Adjustment and enrollment status is quite strong. In developing a linear model, many aspects of the smaller sub-sets in the data can be concealed (hidden in the error terms of

the linear model). Consequently, as the proposed dropout typology includes a type (Troubled) for whom Psychological Adjustment is important, that factor was included in the cluster analysis procedures.

That School Performance, as measured by high school GPA and perception of school success, was most predictive of enrollment status, is an interesting and important finding that has been seen in other empirical studies (Elliot, Voss & Wendling, 1966; Kaplan & Luck, 1977; Morris, Ehren & Lenz, 1991; Pittman, 1991).

Cluster Analysis

Once evidence for solid measurement was revealed, cluster analyses were conducted in an effort to detect homogenous sub-groups within the data.

Initially a four-cluster solution was produced (see Figure 1) since the proposed typology included four groups. However, there were two distinct clusters with high factor scores on the General Delinquency factor. This was taken as evidence for two distinct types of the originally proposed Delinquent Type of high school dropout. Since it appeared that there were two independent Delinquent Types, an additional, five cluster, solution was produced in an effort to evaluate any evidence for the four originally proposed types. The five cluster solution will be described cluster-by-cluster and related back to the proposed dropout typology.

Clusters 1 and 4 are similar to each other in important ways. First, each shows the very high mean level of General Delinquency (Cluster 1 M = 1.70, Cluster 4 M = 1.52); the difference between these two clusters was not statistically significant, but they were both significantly different from the other three clusters. In addition, both show a near-average level of Psychological Adjustment. These two clusters do, however, differ from

each other in terms of both School Bonding and School Performance; in each case the cluster 4 mean is higher than the cluster 1 mean. It is important to note that those cases classified into cluster 1 were among the least bonded to and lowest performers at school.

Members of cluster 2 are remarkable in terms of their being among the most highly bonded to school (as measured by the School Bonding factor), among the most psychological adjusted (as measured by Psychological Adjustment factor) and among the least delinquent (as measured by the General Delinquency measure). The average factor score on School Performance was among the highest.

Cluster 3 is remarkable in one specific way: members of this cluster showed the lowest levels of Psychological Adjustment of all dropout clusters. Post-hoc tests revealed that this difference is statistically significant. Cluster 3 members appear to be average in terms of School Bonding and General Delinquency, and slightly below average in School Performance.

High school dropouts who were classified as members of cluster 5 were among the least bonded to school, but among the most psychologically adjusted and, while they were slightly below average in terms of School Performance, they also appeared to be among the least delinquent dropouts.

Logistic regression was used to determine if participant's sex and ethnic group were predictive of cluster membership. While accounting for ethnic group, sex was predictive of cluster 1, 2, 3 and 4 memberships (see Table 13). Cluster 1 and 4 members were more likely to be male while cluster 2 and 3 members more likely to be female. It is important to note, however, that ethnic group was not predictive of cluster membership for any of the five clusters.

Differences by sex were not surprising given that the General Delinquency factor accounted for a substantial portion of each dropout's profile. Thus, those clusters with higher mean scores in the General Delinquency factor had a higher percentage of males while the opposite was true of those "less delinquent" clusters.

The fact that differences by ethnic group did not emerge is an important finding that should be replicated and pursued in future research. In effect, these results reveal that a typology of high school dropouts can be generated that is valid across at least two ethnic groups. The Delinquent Type, for instance, did not contain a higher relative proportion of Mexican-American than White (after accounting for difference in sex). This suggests that a particular type of dropout experience is not necessarily related to ones ethnic identification; there was not a particularly "Mexican-American" or "White" type of high school dropout.

Typology of Dropouts

The hypothesized dropout typology included four specific types of high school dropouts: *Delinquent Type, Actively Phased-Out Type, Passively Phased-Out Type*, and *Troubled Type*. While there were aspects of the results from the cluster analysis that supported these hypothesized types, there were also aspects that did not.

Delinquent Type

The *Delinquent Type* of high school dropout was described as the adolescent for whom behavior such as alcohol and drug involvement, minor and major crime, and gang involvement become pervasive and consequently prevent successful completion of school. It was hypothesized that members of this type would frequently report that they were expelled from school and that they would report high levels of delinquent behavior.

e teachers did not like me") at the highest rate of any other cluster. This runs counter to the hypothesized definition of the Delinquent type. While self-reported reasons were used as one of the primary ways in which the typology was to be validated, it is also true that asking an adolescent to connect cause and effect is not an ideal method to determine the outcome of a complex multi-determined act like exiting the educational system.

Given that the factor-score profile does fit the description of the *Delinquent Type* presented herein, partial support for the hypothesized *Delinquent Type* of dropout was revealed in these analyses. It is true that cluster 1 is a better fit to the original description than cluster 4; the highly delinquent, but bonded and academically performing high school dropout was not hypothesized, but was revealed in the cluster analyses.

Actively Phased-Out Type

The *Actively Phased-Out (Alienated) Type* of high school dropout was described as the adolescent for whom the education system became intolerable. These adolescents are those that Fine (1986) would call Pushed-Out. The *Actively Phased-Out (Alienated) Type* of dropout can be identified by feelings of extreme alienation from schools and teachers. While no specific hypotheses were made regarding how these adolescents would attribute their enrollment status, members of this cluster were expected to score quite low on School Bonding and closer to average on School Performance. Results of the cluster analysis revealed a cluster profile that fit this general description: cluster 5. For cluster 5 members the lowest relative factor score was, as predicted, School Bonding. In addition, cluster 5 members were among the most adjusted, and least delinquent of all clusters.

Again, while no specific predictions were made regarding this type the self-reported reasons that they left school, 45.3% of cluster 5 members indicated that "I hated school" was an important, or very important, reason that they left school. This fits with the basic description of the type.

Given that the factor-score profile conforms to the description of the *Actively Phased-Out Type* of dropout presented herein, it is clear that evidence of this particular type of dropout was uncovered. One discrepancy between the hypothesized type and cluster 5, however, is related to the lower levels of School Performance that were clearly a part of this cluster's profile. It is likely that the strong relationship between the School Bonding and School Performance factors drove this result. In an effort to clarify this issue, it may be useful for future studies to measure scholastic aptitude in addition to

school performance in order to bolster support for the existence of this cluster. Members of this hypothesized cluster may not necessarily be incapable of performance, but their lack of attachment may well lessen the likelihood of performance; the inclusion of measures of academic aptitude, which may well be less correlated with School Bonding, would likely help clarify this issue.

Passively Phased-Out Type

The *Passively Phased-Out Type* of High School Dropout was described as having diminished academic skills or disruption in the traditional life-course. These adolescents were not thought to be highly delinquent, nor psychologically maladjusted. However, members of this cluster were expected to score quite low on School Performance and closer to average on School Bonding. Results of the cluster analysis did not reveal a cluster profile that fits this general description. Cluster 2, however, may well represent some of the aspects of the proposed type.

A variety of predictions were made in regard to a cluster identified as *Passively Phased-Out Type* in terms of members' self-reported reasons-for-leaving. Specifically, it was predicted that family-related reasons ("To get married," "To have a baby") and work related reasons ("To make money for my family," "To make money for myself") would be cited by the *Passively Phased-Out Type* significantly more often than the other three types. This was certainly true for one reason "To have a baby." The other reasons for leaving school however, did not correspond to the predicted results.

While the factor profile did not match the predicted profile for the *Passively Phased-Out* dropout, it is also true that one of the self-reported reasons for leaving for

cluster 2 met some of the predictions. However, it is true that very little evidence for the hypothesized Passively Phased-Out Type of dropout was revealed in these analyses.

Troubled Type

The *Troubled Type* of high school dropout was predicted to have experienced high levels of psychological distress. Thus, *Troubled Type* dropouts would be identified by low levels of Psychological Adjustment and may or may not be experiencing average levels of School Bonding, School Performance or Delinquent Attitudes and Behaviors.

Results of the cluster analysis revealed a cluster profile that fit this general description: cluster 3. For cluster 3, the lowest relative factor score was, as predicted, Psychological Adjustment; all other factor scores were at near-mean levels.

A variety of predictions were made regarding this type and self-report reasons that they left school. Specifically, it was predicated that this type of dropout would report emotional and health related reasons for leaving school: being lonely, sick, angry and/or unhappy would be most often cited by this type of dropout. As can be seen on Table 15, with one exception, these predictions were supported. Compared to the other clusters, members of this cluster were more likely to have reported that being "sick," "unhappy" or "lonely" was an important, or very important, reason that they left school. The exception, "I was angry," was predictably more often cited by the more delinquent (cluster 1) dropout.

Given that the factor-score profile conforms to the description of the *Troubled Type* of dropout presented herein, and the results of the reasons-for-leaving analysis were supportive, there is clear evidence that this type of dropout exists within these data.

Evaluation of the Typology

On the whole, cluster analyses revealed clusters that generally fit with three of the hypothesized set of four types. While five, rather than four, clusters were identified by the cluster analyses, an examination of profile scores reveals that four of the five clusters fit into the proposed typology. In three cases the reasons-for-leaving data appeared to support the connection between the groups derived from the cluster analysis and the hypothesized groups. While the *Troubled* and *Delinquent Types* of dropouts had the closest fit in terms of the reasons-for-leaving data, both of the Phased Out Types of dropouts (Active and Passive) failed to be completely supported in terms of the hypothesized outcomes.

While it is clear that some of the hypothesized types of dropouts existed within this data, it is also clear that some did not; *Actively* and *Passively Phased-Out Types* did not emerge from these data. Inasmuch as these two types were not uncovered, it is important to reconsider the theoretical construction of these two dropout types in order to inform the final typology.

In the initial formation of the Passive-Phased Out dropout, it was assumed that there were two types of dropouts who would "pull slowly away from the education

the under-performing student, those who may be learning disabled, or did not receive sufficient educational support. The other type was the adolescent with the disrupted life-course; those who marry, begin having children, or need to work full time jobs earlier than their same-aged counterparts who remain in school. It appeared that School Performance drove cluster 5 to a greater extent than was

anticipated. The reasons-for-leaving data suggest that the under-performing dropout is distinct from the dropout with the disrupted life course.

One of the clusters from the five-cluster solution does not fit well into the typology of school dropouts: cluster 2. This cluster shows at-, or near-, average standardized factor scores on all four factors. That is, this cluster shows slightly better than average levels of School Bonding and Psychological Adjustment, and mean levels of School Performance and General Delinquency. The existence of this cluster, and its size (it is the largest cluster, with n = 230 members), is not surprising as a majority of cases in a standardized set of four factors will score at mean levels and cluster analysis is designed specifically to find patterns in data.

It is possible that herein lays a flaw in using cluster analytic techniques to uncover theoretically derived groups from data: it is likely that standardized factor scores will always generate a substantial "average" cluster as standardized factor scores will all be centered on 0. It is also possible that this characteristic of these data informs theoretical development. One of the most important ideas put forth herein is that dropouts can and should be classified into sub-sets in an effort to better target prevention, or intervention efforts. One explanation of the "common cluster" phenomena is that there are school dropouts for whom no typology will fit; these are the dropouts for whom the causes and consequences of dropping out may be so unique that classification would be impossible at best and a misrepresentation of their reality at worst.

Cairns, Cairns and Neckerman (1989) also used cluster analyses to form homogeneous sub-groups of adolescents. The authors found that homogenous clusters of adolescents could be constructed such that prediction of early school departure was

reasonably accurate: cluster structure obtained at time 1 was predictive of school departure by time 2.

The composition of each cluster (profile) was examined and differential dropout rates were uncovered. That is, for each of the 7 distinct profiles that were derived some clusters contained a higher percentage of dropouts than non-dropouts. Thus, dropouts did not cluster into a single profile. The authors concluded that dropouts were as heterogeneous as students who remained in school and that there were dropouts who looked more like in-school students than other dropouts.

While the present methodology and the Cairns et al (1989) methodology differed in one important respect, the results from the present study align well with those from the Cairns et al study. Cairns et al (1989) cluster analyzed all adolescents; the present study cluster analyzed only dropouts after developing the measures on all adolescents. The impact of this methodological difference is of minor; Cairns et al (1989) were attempting to build a longitudinally predictive model of dropout behavior while this present study was focused on uncovering homogeneous subtypes. However, both studies share a major finding: dropouts cluster into homogenous, and dissimilar, groups.

Implications

The results of this study have wide-ranging implications for the study of the dropout phenomena, the development of a more comprehensive theory of early school-departure, and early school-departure prevention/intervention efforts.

One of the more important implications of these finds is that they may soften the "deviant-ness" of dropping out of school. As both Fine (1986), and Fine and Rosenberg (1983) point out, many of those who are classified as a dropout are actually making

n oversimplification of complex phenomena has taken place. The development of theory in the study of the dropout phenomena rests

upon the assumptions of the theorist, which in turn rest upon the data. Theory development from these data should proceed under the following assumptions. First, the act of leaving school is often multiply determined. Second, patterns of these causal links exist and can be identified. Finally, there is utility in understanding these patterns of causal links. If patterns of predictors can be detected and understood, then prevention and intervention programming could be designed to act specifically on the issues of a more sharply defined sub-grouping of people. If, for example, there were a group of people with the same medical symptom—a cough, for instance—a cough suppressant could be prescribed. However, if more sensitive tests were developed and put into practice, the specific causes of specific coughs could be determined and treated appropriately: one group with antibiotics, one with cough suppressant, and another with the Heimlich maneuver. The analogy can be applied to the study of high school dropouts. Until now, dropouts were often treated with a barrage of interventions and, much like the cough suppressant, positive results could occasionally be seen. Theory building flourishes when empirical evidence points in a single direction. Up to this point, the high school dropout literature has not uncovered this direction. By further sub-classifying dropouts into more homogeneous sub-groups, and as a consequence of the tightening of operational definitions, it is possible that theoretical development can be sent in a new direction.

In effect, the most important way that these data may inform theoretical work in the study of the high school dropout phenomena is by allowing theories to be re-tested using the smaller and more homogeneous sub-populations. It may well be the case that for the delinquent type of high school dropout, Problem Behavior Theory (Jessor &

Jessor, 1977) is a powerful explanation. Thus, by further subdividing the population of interest, it is likely that several theories require reevaluation and consideration.

In addition, if the development of a typology of dropouts is successful, then targeted prevention and intervention efforts should, as a result, be more effective. Prevention programmers can also benefit from the findings contained herein. As prevention and intervention programs are put in place that relate to specific casual links, by specific types of dropouts, it is likely that prevention and intervention efforts can be made more tailored, targeted, and, as a consequence, more successful (Hawkins, Catalano and Miller, 1986). Many of the most successful high school dropout prevention programs have used a "multi-method approach." That is, doses of academic assessment and mentoring, peer- and professional-counseling, family intervention, drug and alcohol prevention, teen-pregnancy protection and job-skills training. It is likely that these programs have been the most successful because of their wide focus. However, it may be that narrowing focus and delivering prevention services and messages to the right person, at the right time, will result in more efficient allocation of resources. The teen who drops out to work so he or she can support his or her family does not necessarily need to hear the same messages or receive the same treatment approach as the teen who is expelled for delinquent behavior at school.

Street and Franklin (1991) said: "Exploration of the differences between varying types of dropouts is needed to identify effective methods of dropout prevention and remediation." If the central hypothesis of this dissertation is accepted, it becomes clear that both intervention and prevention programming should begin to tailor program characteristics to fit their dropout types more closely. Mensch and Kandel (1988)

suggested that one way to reduce the likelihood of school dropout is to implement programs that could delay the age of first use of drugs and/or alcohol. The data presented here suggests that a targeted program may be of more use as not all dropouts use drugs. In fact, there is a segment of the high school dropout population that uses drugs and alcohol less often than does the in-school population.

Successful dropout prevention and intervention strategies are either targeted to specific needs of a dropout sub-population or are multi-component (Dryfoos, 1990). In fact, research has shown that alcohol and drug misuse, and other problem behaviors, are predicted by both individual and environmental risk factors (Hawkins, Catalano & Miller, 1992; Kandel, Simcha-Fagan & Davies, 1986; Newcomb, Maddahian & Bentler, 1986) and that by successfully targeting relevant risk and protective factors with empirically validated prevention/intervention programs a reduction in negative outcome behaviors may occur (Hawkins, Catalano and Miller, 1992).

The data presented here inform this discussion in two important ways. First, an empirically supported typology of dropouts provides a crucial targeting mechanism that would allow for more accurate needs assessment in the prevention planning process. On the level of prevention, once a community has an understanding of the prevalence, and specific make-up, of their dropout problem, prevention programming dollars can be more appropriately channeled toward specific, highly relevant issues. On the intervention side of the issue, individual non-completers can be, in effect, prescribed the right medicine. Rather than a multi-component program that attempts to solve all problems for all people, targeted programs can be designed that target specific problems for specific sets (types) of people.

The second way in which these data are relevant to prevention and intervention is related to one of the central conflicts in the field: the desire to efficiently allocate scarce resources is often pitted against the desire to achieve wide impact. This, often, is directly at-odds with the principled application of programming. That is, it is difficult to be both cost effective and adequately service prevention and intervention needs within a community.

In terms of efficient allocation of resources, it may be true that multi-component programs are effective because they are either equipped and designed to address the needs of a variety of different types of dropouts or, equipped and designed to address the needs of a specific type of dropout. Efficient allocation of resources means designing a single program that can be implemented widely. Economies of scale necessitate a "design once and distribute widely" process. In terms of the implementation of economies of scale in prevention, the Dare Program® is a good example. D.A.R.E. is a nationally distributed prevention program that includes two major components: drug education and visibility of the police via the Dare Officer program. The D.A.R.E. program is a classic example of a one-size-fits-all program: its implementation varies little from site to site. However, ethical application of prevention/intervention programming requires that programming be maximally effective at the individual level. Clearly, the most ethical method of prevention programming would be to consistently deliver the right "medicine" to the right "patient." Thus, to take the medical example a step further, it would be unethical to give antibiotics to a person who is bleeding, especially when a treatment (or prevention effort) that is effective is available. In terms of dropout prevention, if practitioners were able to classify the types of dropouts within a community, then target

programming specifically toward that type, better results could be realized. Taken a step further, an individual approach where each non-completer is provided uniquely targeted programming which incidentally may be the most effective method of both prevention and intervention is not pragmatic as it is not an effective use of resources.

The use of a typology of high school dropouts, such as the one presented herein, provides a balanced and pragmatic approach to this issue. It is balanced in that it does not suggest that all high school dropouts should be treated with one-size-fits-all programming, nor does it suggest that each individual high school dropouts is provided prevention/intervention services that are tailored to their unique set of circumstances. Rather, it suggests something in between. It suggests that a lower level of aggregation is required than would be prescribed in the one-size-fits-all approach, and that a higher level of aggregation is required than would be prescribed in the individualized approach. It is pragmatic because it points practitioners toward effective programming that can still target a population while still efficiently distributing resources. In effect, any prevention/intervention effort modeled after this sort of typology will, if the typology is valid, provide a balanced approach to maximizing effectiveness of programming and minimizing the costs involved.

Methodological Limitations and Future Research

There were several methodological limitations that directly impacted this study. First, these data were cross-sectional. While this research does not statistically infer causality, there are underlying assumptions about causality that cannot be adequately tested using these data. For example, the *Troubled Type* of high school dropout is defined by a history of psychological problems. Within the data presented here, it is not possible

to parse the effects of academic difficulty and its impact on psychological adjustment from experiences of abuse or neglect and their potential impact on psychological adjustment. Without longitudinal data, this assumption remains untested.

Furthermore, longitudinal methods must be employed in order to fully explore the validity of the results and interpretations presented herein. If there are four (or more, or fewer) distinct types of high school dropouts, then there should be outcomes that are predictable. Those adolescents classified as Delinquent Dropouts at time 1 should, if this classification system is valid, show lower rates of completion and higher interaction with the legal system than other types of less delinquent dropouts at time 2. Similarly, a *Phased-Out Dropout* should show a high level of educational resiliency; their contact with the education system is likely not complete. Validation of the classification system, tweaking around the edges of the typology, becomes extremely important as adjustments to the system have ripple effects that may be felt in both the literature as well as prevention and treatment efforts. This process of refinement is best conducted with longitudinal data.

Second, future research studies into this dropout typology should focus on validation of the typology, which would include an analysis of longitudinal data to examine whether predictions made from the typology are validated over-time. Examination of these sorts of data over time will accomplish two things. First, this sort of longitudinal study would provide additional external validation of the cluster structure. Second, it would begin to parse out the consequences of leaving school on individual types of high school dropouts thus informing both prevention and intervention efforts.

Third, an additional methodological limitation of the present study is that it relied exclusively on self-report data. Self-report survey data has many strengths, including the ease and consistency of data collection, and its suitability for a variety of advanced statistical methods for the analysis of reliability and validity. Self-report methods of data collection, on the other hand, also have inherent weaknesses. One of its primary weaknesses is susceptibility to social desirability that can certainly influence outcomes. Thus, additional measures should also be considered. For instance, while it was true measures of psychological adjustment were based on previously conducted research, it is also true that these measures were not designed to assess clinically significant levels of psychological distress. Clinically significant psychological distress may, in fact, be a better gauge for detecting the *Troubled Type* of high school dropout than the general measures of psychological distress presented here. As a consequence, future studies should attempt to collect both self-report and archival data. Any time that adolescents (or adults for that matter) are asked questions, even anonymously, there is the problem that their responses are influenced by the simple act of asking the question. Thus, archival data from school records, law enforcement records, and other supporting data such as data collection from parents and teachers, could provide further data to help validate, or attenuate, the typology. Additional work on the typology would be best served by collection and analysis of data from multiple-sources; as can be seen in the reasons-for-leaving data. High school dropouts are a critical, but not sufficient, source of data.

Future studies should be designed that would focus on the dropout typology as a starting point and attempt to collect additional validation data. Since the ideas presented herein were not generated before the study was designed, many opportunities for this sort

of data collection were missed. Additional, high quality validation data could both provide additional evidence for the cluster structure, as well as inform its evolution.

A final methodological limitation of these data is that they are not a representative, random sample of all high school dropouts. As was described, the participants who were identified as high school dropouts were not sampled. Rather, examination of school records generated a list of should-be students who fit the criteria for identification as a dropout. They were then contacted. However, many high school dropouts were probably not represented with this method. Those students who had moved recently, or left school at an early age, were probably excluded from the population as defined by the study's parameters. Consequently, as has been noted, care should be taken in making generalizations, from these data to the dropout population as a whole. It is possible that an additional type, or types, of high school dropouts could be uncovered by generating a more representative sample of high school dropouts.

Closing Comments

The classification of all high school dropouts into a single group has three primary disadvantages. First, it is a false aggregation. That is, it is a classification system that collects dissimilar people into a single group. Second, it blurs the lines of causality. Thus, it collapses, and simplifies a fundamentally complex system of processes, many of which are interactions among environmental, social and individual influences. In fact, it may even promote a notion that leaving high school early is a singly caused event. Third, at best it blinds intervention and prevention efforts and at worst, it points practitioners toward providing ineffective, or even contraindicated, prevention/intervention programming.

The data presented herein provides some empirical evidence that relatively homogeneous sub-sets of people who did not complete high school both exist and are detectable.

Regardless of how specific types of dropouts are defined, there can be argument for more, or fewer, types. However, the twin goals of this dissertation were to (a) generate a valid and pragmatically useful typology of dropouts, and (b) develop a tool that will allow researchers studying the dropout phenomena to better understand the causes and consequences of school dropout behavior. This, in turn, can than affect a push toward better evaluation of programs as well as better evolution of theories of dropout behavior. While leaving school is not a unified (singly caused) phenomenon, it is also not one where every single case is unique enough to warrant a unique solution; this is particularly true in places where resources are scarce. The underlying assumption of this research is that the reality of the phenomena lies somewhere between these two extremes.

Evidence presented here and elsewhere indicates that "High School Dropout" is clearly a misnomer that pushes us toward attributions that are, oftentimes, entirely inaccurate. Fine (1986), made this point: "call them push-outs, call them dropouts, call them stop-outs, our current language does not conform with what is known about the person who does not complete high school." Language that is more broad, such as "Non-Completer" versus "Completer," certainly is more reflective of the reality of these

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