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ABSTRACT

Data from the National Longitudinal Study of the High School Class of 1972 were used to evaluate the contention that big-time college sports exploit athletes, denying them an education that will help them succeed after college. The sample (N=8,101) consisted of six comparison groups of students who attended four year colleges: varsity football and basketball players; varsity athletes in other sports; intramural sports participants; performing arts students; nonathletes; and a residual group who claimed to be active in athletics, identified by transcript entries for "varsity" or "intercollegiate" sports, whether the entries carried credits or not. Major findings of the study include the following: (1) varsity athletes, including football and basketball players complete the bachelor's degree at a reasonable rate, but it takes them longer to do so than other groups, their grades are lower, and their curricula are less demanding; (2) ex-varsity football and basketball players do very well economically in the first decade of their worklives, whether or not they earned college degrees; and (3) at age 32, they had the highest rate of home ownership, the lowest rate of unemployment, but were the most likely to have lower status occupations than other groups. Results suggest that colleges do not exploit athletes but that the near term educational promises colleges make to students are not being kept. Includes 19 references and 17 tables. (LPT)

Light and Shadows on College Athletes

College Transcripts and Labor Market History

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Executive Summary

[This paper will be a chapter in *Archives of a Generation*, to be published in the winter of 1990-91, and refers to another chapter in that volume.]

This paper examines the long-term educational and labor market careers of college varsity athletes in the National Longitudinal Study of the High School Class of 1972 (NLS 72). The NLS 72 data include high school records and test scores, 12 years of college transcripts, and 14 years of labor market history, along with massive amounts of information collected from participants in 1972, 1973, 1974, 1976, 1979, and 1986.

The advantages of this data base are that it provides unequivocally accurate long-term college graduation rates, detailed data on college courses taken, and data on labor market participation (occupation, earnings, etc.) on a generation through age 32. Also, this data base is "naturalistic"; that is, because it starts with a sample of all high school seniors, whatever subsequently happens to them is not distorted by decisions to study specific groups of students.

Six groups of students who attended 4-year colleges were compared: varsity football and basketball players, varsity athletes in other sports, performing arts students, intramural sports participants, nonathletes, and a residual group (i.e., everyone else). The athletes were identified from transcript entries for "varsity" or "intercollegiate" sports, whether the entries carried credit or not. Because not all colleges enter such information on transcripts, the sample for this group is understated, but there is no doubt that the people identified in this manner were in fact varsity athletes.

The major findings, some unexpected, were as follows:

- Compared with the other groups, varsity football and basketball players enter college with relatively poor high school records and test scores and the highest ratio of vocational to academic subjects in high school, yet graduate from college at only a slightly lower rate.

- The principal reasons for this outcome are that varsity football and basketball players (a) are more likely than students in the other groups to receive scholarships and (b) they are more likely to enter college directly from high school. Other evidence

strongly suggests that these athletes have access to a "safety net" that is not available to other students.

- On the negative side, those varsity football and basketball players who graduate take longer to do so than nonathletes, earn lower grades, and pursue less demanding curricula.

- Varsity football and basketball players earned one out of every seven credits in a de facto sports curriculum. Compared with the other groups, these students were more likely to have taken remedial and introductory courses, personal service and development courses, and vocational courses in trades and office support.

- Nonetheless, at age 32, ex-varsity football and basketball players had the highest rate of home ownership and the lowest rate of unemployment of all groups, along with earnings 10 percent above the mean for all former 4-year college students. Given the fact that a relatively high percentage of these athletes came from low socioeconomic status (SES) backgrounds, these data suggest that a high degree of economic mobility correlates with participation in varsity sports.

- Former varsity football and basketball players were the least likely of any group to claim that their higher education was relevant to their work, were the least likely to work with ideas "a great deal," and were the most likely to have lower status occupations at age 32 than they had aspired to at age 19. Although job stability and wages in these occupations may compare favorably at age 32, they are less likely to offer long-term mobility.

- The percentage of respondents listing their occupation at age 32 as "artist, athlete, or entertainer" was lower among ex-varsity football and basketball players than among any of the other groups.

- Most of these findings about *all* varsity football and basketball players are also true for *black* varsity football and basketball players.

Observers have charged that varsity college athletes, particularly those in football and basketball, are "exploited." With reference to credentials and intermediate-term economic consequences, the data strongly suggest that this charge is false, although the data imply that the near-term educational promises colleges make to students are not being kept.

Light and Shadows on College Athletes

by Clifford Adelman
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The fall season of 1989 came on us early. Dogged by a decade of scandals and suspensions, squabbles over admissions standards, and sloganeering over racism, college athletics moved from the sports pages to the legislative chambers. While college presidents fought with the National Collegiate Athletic Association (NCAA) over voluntary disclosure of the status of athletes as students, bills on required disclosure of graduation rates slouched their way toward law in both House and Senate.[1]

It is a sign of our cultural values that the question of whether college athletes (particularly football and basketball players) actually graduate is of greater concern in national policy than whether college students study any college-level math after high school (only half do), whether business administration majors study any international affairs or foreign languages (not much), or whether engineering majors have demonstrated proficiency in English sufficient to communicate with clients (they have not). These groups outnumber varsity athletes in the offending sports by 50 to 1 and have a far greater impact on the quality of life in our Nation.

It is also sadly obvious that no research grant ever brought to a university the national visibility that a Final Four or Bowl appearance does, though how much such appearances have to do with the fundamental reasons colleges and universities were established in this country (or anywhere else, for that matter), or the reasons that state and federal taxpayers continue to support them to the tune of $100 billion annually, is a mystery.

Nonetheless, we argue over graduation rates of athletes. And the arguments that fill the newspaper columns and the legislative chambers too often refer to either anecdotal information, single-institution studies, NCAA conference studies, or outright popular mythology (e.g., Axthelm 1980; American College Testing Service 1981; NCAA 1989; Purdy, Eitzen, and Hufnagel 1982; Weistart 1987). In most cases, the data are gathered and reported by or for interested parties.

The following two statements from highly regarded sources illustrate the poles of such references:

> . . .for football players to earn degrees in many of the most athletically successful programs is appallingly rare. Graduation rates for football (and basketball) players are often less than half those for the student body as a whole.
>
> --Donald Kennedy, president, Stanford University
> (*New York Times*, January 28, 1990)

> Student-athletes, in general, have very high graduation rates, usually higher than non-athletes. Based on data from the NCAA, the student-athletes from all sports combined who were enrolled as freshmen in 1980-1981 posted a median graduation rate of 66.6% compared with 59% for all students at those particular schools.
>
> --Richard Lapchick, director, Center for the Study of Sport and Society, Northeastern University (Lapchick 1990)

Where the president of Stanford gets his figures no one asks--and he is not telling. And when the NCAA reports such figures, one has to take a very deep breath, particularly given the highly ambiguous way in which the data are reported--and for 291 Division I colleges and universities only.[2] Lapchick unwittingly confirms this skepticism when he refers to graduation rates "at those particular schools."

The purpose of this chapter is to demonstrate how the National Longitudinal Study of the High School Class of 1972 (NLS 72) Archive (and, we hope, the High School and Beyond Sophomore Archive in the future) can be used to contribute responsible information to such policy debates. The subjects here are college athletes, but the focus could be any other subgroup of students identifiable within such an archive.

Unlike other surveys, the NLS 72 data base was not designed with a study of college athletes in mind. The NLS 72 is an unobtrusive, "naturalistic" data base and, as such, has both advantages and limitations compared with targeted, intrusive studies.

The principal virtue of a naturalistic data base when dealing with a particular subgroup of students who attended college can be expressed simply: "that is the way it was." Those are the fish that were in the sea. We did not sort the fish first, letting some in and some out. We let the sloppy course of history determine who the subjects would be.

The disadvantage of this approach is lack of statistical power. That is, in a natural sample of all students who were in the same high school class and went to any kind of college at any time over a 12-year period, varsity athletes will make up a small percentage of the whole, no matter what sport is at issue. As the 1984 survey of undergraduates by the Carnegie Foundation for the Advancement of Teaching demonstrated, a maximum of 7 percent of 4-year college students participated in "intercollegiate athletics" (Boyer 1987).[3] If the national visibility, television-contract college sports (men's football and basketball) are at issue, then varsity athletes make up an even smaller percentage of the whole. Whatever we may say about these persons, we run the risk of large standard errors of measurement.

Identifying Varsity Athletes

The first task was to drag a number of nets through the sea of NLS 72 data to identify and describe distinct groups of athletes. The history of this task is itself instructive, principally because of the formidable obstacle that in none of the five NLS 72 surveys conducted after high school graduation were subjects asked, "Were you a varsity athlete in college?" and "If so, in what sport(s)?"

In my first attempt, I focused on (a) students' responses in 1972, 1974, and 1976 to survey questions on degree of involvement in athletics; (b) the number of earned credits in sports or sports-related courses (some institutions do give credit for varsity football and virtually all institutions give credit for courses with titles such as "Care and Prevention of Athletic Injuries," "Recreation Internship," and "Conditioning and Body-Building"); and (c) kind of college attended (4-year institutions, because athletes at community colleges are not the concern of Congress and the newspapers).

Four mutually exclusive groupings of students emerged: likely varsity athletes, physical education schoolteachers, intramural athletes, and nonathletes. While providing some prima facie support for the analytical categories in terms of high school backgrounds and college course-taking, the demographic characteristics and college graduation rates of these four groups were not very persuasive. More critically, the groupings themselves were speculative at best.

Next, I turned to the NLS 72 Postsecondary Transcript Sample (NLS/PETS), and flagged all course titles that were coded under "Physical Education: Activities"[4] and that used any of the following words (verbatim or in abbreviated form): "varsity," "intercollegiate," or "team practice." These titles were recoded as varsity athletics. There were two such codes: one covering football and basketball (i.e., the "major" sports), where named, and one covering everything else.

This recoding effort indicated who had received a transcript entry (credit-bearing or not) for participation in varsity athletics. Not all colleges enter such information on transcripts, but at least I could be absolutely sure that the students who carried one or both of the two new course codes were, in fact, varsity athletes.

Following this methodology strictly meant that some students who were clearly varsity athletes were not identified as such, including three basketball players and one each in football, track, tennis, and skiing. These students had earned between 5 and 16 credits each in those sports. Two dozen additional students had six or more transcript entries each under the "Physical Education: Activities" code, entries with generalized, ambiguous titles like "Advanced Sports," "Independent Study," "Team Activities," and "Competitive Athletics," but because they were *not* physical education majors and because the keywords ("varsity," "intercollegiate," or "team practice") were missing, I did not identify these students as varsity athletes.

An interesting illustration of transcript discrepancies and the rigor with which the decision rule was applied involves the military service academies. The Air Force Academy entered course titles on transcripts in such a way that varsity athletes are identifiable, but neither the Naval Academy nor the Military Academy did. All three schools expect cadets to be active in athletics; all three require physical education courses in each year of attendance, and all three enter those courses on transcripts.

I include women's basketball under major varsity sports because, of all women's sports, basketball receives the most media attention. The critics will argue that because there is no professional league for women's basketball, colleges do not serve as the minor leagues as they do for the National Football League and National Basketball Association, so the potential for exploitation and scandal is minimal and women should not be included among "varsity athletes: major sports." I regard such criticism as a sad commentary, even though the premise is honest.

Six Comparison Groups

A cascading logic was used to sort students into six groups (i.e., students in group #1 could not be part of any other groups even if they met the conditions for membership). The first condition for all these groups was college attendance confined principally to 4-year colleges. The variable for college attendance pattern used in chapter II of this volume has 10 values, and in 6 of them, the 4-year college experience dominates.[5] Of the 12,599 students in the NLS 72 transcript sample (NLS/PETS), 8,101 fell in these six patterns; these students constitute the basic universe for this study. Of this group, just under 3 percent were varsity athletes in any sport in college.

The six groups identified are the following:

- Varsity Athletes: Major Sports (Football and Basketball). Each student in this category had at least one transcript entry (credit-bearing or not) under the new code for "Physical Education: Major Varsity Sports." Students who participated in both major and other varsity sports were included in this category only. There were 134 students in this group.

- Varsity Athletes: All Other Sports. Each student in this category had at least one transcript entry under the new code for "Physical Education: Other Varsity Sports." There were 93 students in this group. Baseball and track were the most frequently indicated sports in this group, followed by tennis, golf, swimming, and soccer.

- Performing Arts Students. This key control group is discussed at some length in the next section. Students in this category indicated in the base year (1972) survey that they had been very active in one or more performing arts in high school; on their college transcripts, they earned more than six credits in performing arts courses

involving actual performance (not music theory or stagecraft, e.g.). There were 310 students in this group.

- Intramural Sports Participants. Students in this category claimed to be very active in athletics on all three occasions when they were asked in the surveys (1972, 1974, and 1976). Yet their transcripts showed three or fewer "sportscredits," even in basic courses. (I chose three credits as the cutoff because it was the mean number of "sportscredits" earned by all 8,101 students in the sample for this analysis.) I am assuming that these people were active in either intramural or personal athletic endeavors. If other varsity athletes exist in the NLS/PETS, some are probably included among the 629 students in this category. The number and weighted percentage (7.8 percent) of this group is probably low: the Carnegie Foundation survey of undergraduates claimed 14 percent engaged in intramural sports for more than 2 hours per week (Boyer 1987, 181).

- Nonathletes. Students in this category never claimed to be active in athletics. In addition, their college transcripts show no "sportscredits." This large group numbers 2,400.

- Everybody Else. Some people in this group claimed on only one or two surveys to be active in athletics. Some earned "sportscredits." But none of them met any of the membership criteria of the other five groups except college attendance pattern. This residual group is the largest of the six: 4,535.

From this point on, however, I refer to weighted percentages of students, not numbers. Depending on the variable under discussion, I use one of three NLS 72 panel weights.[6] The National Center for Education Statistics constructed these weights to account for sample design and to provide population estimates. The reader should not interpret any table as representing the entire NLS/PETS sample of 12,599. Because all data in this chapter refer only to the 8,101 students who met the basic criterion of college attendance in which the 4-year college experience is dominant (see footnote #5), some of the data do not match data in other chapters.

Nearly all comparative percentages discussed in the text are statistically significant at the .05 level. Standard errors are provided, as appropriate, both in the text and in the tables following the text.

Performing Arts and Varsity Athletics

The primary reason for identifying performing arts students as a subgroup in this analysis is that they are an important component of another, very prominent, project, namely, the National Study of Intercollegiate Athletes, carried out by the American Institutes for Research (AIR) for the Presidents' Commission of the NCAA. The AIR undertaking is a large, complex study that looks into the lives, backgrounds, social and psychological

development, college experiences, finances, perceptions, and feelings of current college athletes in 42 Division I NCAA schools. The project also includes a transcript sample of 2,077 students at 20 of these schools.[7] The study delves deeply on a narrow playing field, so to speak, and in this respect, it is valuable. In other respects, its value is limited: none of the students in the study had graduated from college, the sampling was designed to produce quotas in various categories, the ratio of varsity athletes to other students was 3:1, and the study covers only Division I NCAA schools--291 institutions out of 1,800 4-year colleges in the United States.

A critical feature in the conceptual framework of the AIR studies is a control group of students with which college athletes are compared. Loosely defined, this control group consisted of "other students who devote a great deal of time to a particular extracurricular activity [other than athletics]" (AIR 1988b, 17). The 42 institutions themselves identified extracurricular activities based on the following criteria:

- They require 15 or more hours per week;
- They involve competition;
- Successful performance involves physical and emotional pressures;
- These activities are related to possible careers;
- The special talents necessary for these activities can be identified in individuals at a "relatively young age"; and
- These activities offer such extraordinary personal (social, psychological) benefits to participants that stopping participation may have severe consequences ("real costs").

What extracurricular activities were identified in this manner? The following, with the percentage of the AIR extracurricular student sample in each (AIR 1988a, 83):

Performing arts	37%
Student services, government	14
Work-study	12
Fraternity, sorority	10
Club sports, intramurals	8
Clubs	8
Newspaper, magazine, radio station	8
Other	3

Only one of these categories of extracurricular activities really meets the six criteria, however, and it is the same category that would qualify on other, more valid criteria related to athletics--namely, performing arts.

What are those other more valid criteria? There are four. First, performing arts activities and the groups that execute them--orchestras, drama troupes, bands, dance companies--are necessary to the maintenance of institutional culture in any college and, in some institutions, contribute to the distinct identity of that culture. The performing arts are very much like varsity athletics in this regard: both can provide the institution with identity, as well as a distinct coloring to student life that, for example, college newspapers, radio stations, and fraternities and sororities do not. Because the display of student talent in both athletics and performing arts is organized around discrete, nonroutine events, these activities are also distinct from the daily, often routine activities associated with clubs, newspapers, radio stations, student services, and social organizations like fraternities.

Second, in the case of both performing arts and varsity athletics (unlike most of the other categories in the AIR control universe), the extracurricular is co-curricular. There are degrees in performing arts, and there are de facto degrees in varsity athletics. There are no degrees in clubs, student services, work-study, intramural sports, or Greek life. Along these same lines, the other extracurricular activities on the AIR list can function without faculty. Not so the performing arts. They require expert coaching, directing, instruction, and critique--just as varsity athletics do. And, in general, colleges maintain expert staff to perform these functions. It is also true that both performing arts and athletics, unlike the other extracurricular activities in the AIR universe, are continuous curricula tied to organized instruction in educational institutions from the elementary grades through college. Prospective school teachers and college faculty are trained in and can be certified or credentialed in both areas.

Third, as industries, both performing arts and athletics possess high visibility, high glamour, and mythological power. Our media have canonized the secular dreams of thousands of young people to become stars of the playing field, stage, or screen. And college can serve as an incubator of these dreams. Even though the odds against success are overwhelming, the dreams do not die easily.

Fourth, collegiate-level performing arts are informed by normative values, and colleges are normative institutions. College newspapers and work-study programs, for example, are not normative organizations. Amateur athletics *should* be normative, but what puts college athletics on the front pages of the newspapers today derives from the fact that they are not (Cullen, Latessa, and Byrne 1990; Sperber 1987).

Indeed, the differences between performing arts and varsity athletics stem from this fact. There are no $1 billion television contracts associated with college-based performing arts groups and no audiences of 30 million on New Year's Day. Piano or ballet competitions in Leningrad aside, there is no international Olympics of amateur dance, drama, or music.

Other differences should be obvious. There is but one U.S. sports academy that grants baccalaureate degrees, but dozens of American academies of music, theater, and film do so. And the professionalism in the curricula of these academies has been assumed by many colleges and universities under the rubric of "the conservatory degree." We do not give conservatory degrees in athletics--at least we do not admit that we give them; but we are

forthright about degrees such as the B.F.A. in theater or the B.Mus. and do not pretend that these degrees do anything more than prepare individuals for professional roles in the performing arts. The B.A. in music and the B.A. in drama are, however, fundamentally different from a conservatory degree: they do not require as much specialized work and allow far more room for taking courses across the broad fields of knowledge, a breadth characteristic of the generic Bachelor of Arts degree.

Despite the analogies between the performing arts and athletics, performing arts students and varsity athletes are, as this study demonstrates, very different groups of people. In addition, the labor market experience of the NLS 72 cohort demonstrates that performing arts activities are far more significant than varsity athletics to participants' careers.

Demography of the Sample

Table 1 provides basic demographic information on the six groups. It is not surprising to find that the percentage of blacks among varsity football and basketball players is more than double the figure for all blacks in the sample (18.0 percent vs. 8.7 percent). Even so, the percentage seems low. (But remember that this data base covers students in all 4-year colleges, not merely Division I NCAA schools.) The lowest percentage of blacks is found among intramural sports participants, indicating that blacks active in sports, who come from lower socioeconomic status (SES) backgrounds to begin with, are naturally more likely to participate in intercollegiate sports--where the scholarships lie.

Indeed, varsity football and basketball players (of all races) are least likely of all six groups to come from high-SES households and are most likely to receive scholarships (as discussed below). Students from high-SES backgrounds participate disproportionately in minor varsity sports (which are dominated by baseball and track, but also include skiing, tennis, and golf, i.e., the leisure sports of the upper middle class) and performing arts (the talents for which require early development through private lessons and hence are generally inaccessible to the poor).

The demographic differences between nonathletes and the residual category are negligible for all variables with the exception of sex. Here, the composition of all six groups, though, helps greatly in explaining their comparative academic performance (see the following section).

High School Backgrounds

The conventional wisdom, which says that varsity athletes, particularly those in major sports such as football and basketball, have comparatively weak academic backgrounds, is correct. As table 2 indicates, college varsity athletes took far fewer foreign language courses in high school than anyone else and studied less math and science than anyone except the

performing arts students. Intramural sports participants, in contrast, had the strongest backgrounds in math and science.

At the same time, the future varsity football and basketball players took more semesters of trade and business courses in high school than any of the other groups.

Athletes in major varsity sports had the lowest mean high school class rank of all six groups and were least likely to come from the top quintile of their high school classes (table 3). This combination of limited study in college preparatory subjects and lower academic performance may explain, in part, this group's significantly lower scores on the Scholastic Aptitude Test (SAT) and American College Testing Program (ACT) (table 4). Under NCAA's Propositions 48 and 42, students whose combined SAT scores are below 700 are precluded from playing varsity sports in their freshman year. One out of four varsity athletes in the NLS/PETS would have been excluded had this rule been in effect in the 1970s. In fact, roughly two out of three varsity athletes scored below the mean for the comparable NLS/PETS sample on the SAT (and ACT converted to SAT scales).

What about the other comparison groups? Varsity athletes in minor sports had the highest SAT scores, reflecting both better academic performance in high school and more classes in foreign languages and science. Performing arts students were distinguished by the paucity of their high school work in math and science and the significant amount of time they spent in formal fine and performing arts courses. But neither fact seems to have affected their high school class rank or SAT and ACT scores as much as poor preparation affected varsity football and basketball players. One reason is that more than 60 percent of the performing arts students are women, and women consistently have higher high school class rank than men, no matter what set of curricular controls are applied.

A second reason, and one that also applies to varsity athletes in minor sports, is that a far higher percentage of performing arts students than varsity athletes (51.7 percent vs. 32.6 percent) come from the top quarter of the SES range (see table 1), and SES is one of the strongest correlates of both high school performance and SAT and ACT scores.[8]

College Performance: Some Positive Findings for Athletes

One of the major findings of this study is that varsity athletes, including football and basketball players, complete the bachelor's degree at only a slightly lower rate than anyone else, and that black varsity athletes complete the bachelor's at a higher rate (50.2 percent) than do all blacks in the sample (44.9 percent), and black nonathletes in particular (26.2 percent). The importance of this finding should not be understated, as the NLS 72 is the only extant data base that accounts for *eventual* degree completion (within 12 years) and that bases its account on college transcripts and not testimony of football coaches or college presidents.

Table 5 summarizes the data on the highest degree earned. Most of the differences in degree attainment rates among the six groups are statistically significant. The one exception

is the comparison between varsity athletes in major sports and the residual group ("everybody else"). But in this case, the difference in graduation rates is slight to begin with.

As for blacks (who are of particular concern in connection with varsity football and basketball), the numbers in some categories are too small and the standard errors too high, but the differences in the percentage of blacks earning B.A.s suggest that participation in major varsity sports was not a drag on the degree-completion rate in this NLS 72 generation--at least among the students identified with certainty as varsity athletes. It is also worth noting that a far higher percentage of black varsity football and basketball players who completed the B.A. also completed a graduate degree than did both white athletes (28.7 percent vs. 11.8 percent) and all other categories of blacks except those in the intramural group.[9]

Varsity athletes start college at a disadvantage: less adequate high school preparation, lower high school performance, lower SAT and ACT scores. Yet, over the 12-year period covered by the NLS/PETS, they do no worse than other groups in terms of college completion. Why?

Scholarship Support

First, they receive scholarships in excess proportion to their numbers (table 6). Some 55.9 percent of the NLS 72 varsity football and basketball players received scholarships during the first 2 years after high school, versus 49.6 percent of performing arts students and 31.6 percent of nonathletes. In contrast, the AIR study of 1987-88 (AIR 1988a) reported that 60.1 percent of football and basketball players at Division I NCAA schools were on full scholarships, and that nearly three out of four had received athletic scholarships (AIR 1988a). It may well be that we passed out more athletic scholarships in the 1980s than we did in the 1970s, but the differences are more likely due to the broader representation of institutions in the NLS 72 sample. Whatever the case, a student getting a scholarship is less likely to drop out of college for financial reasons and less likely to interrupt or attenuate study by taking on a job compared with other students.

Indeed 68.7 percent of all students who attended 4-year colleges and received scholarships in the first 2 years following high school graduation completed bachelor's degrees, compared with 52.4 percent of those who received no scholarship support at any time.

The AIR study provides an additional note on the finances of varsity football and basketball players. Some 52.2 percent of those athletes reported that it was easier to get a summer job, versus 28 percent of varsity athletes in other sports and 32.1 percent of the extracurricular group. (AIR 1988a, 11). This is another piece of the safety net that has been woven by coaches and boosters to ensure the continuing quality of their teams.

Performing arts students are just as likely as varsity football and basketball players to receive scholarships at some time during their college careers (defined here as within 7 years following high school graduation). However, the difference between these two groups and all other groups in this analysis is substantial and significant. This story is not new: colleges

recruit with scholarships (regardless of need--and remember that performing arts students tend to come from higher SES backgrounds than students in the other groups) students who can maintain institutional culture and nonacademic life.

No Delayed Entry

Second, varsity football and basketball players are more likely to enter college immediately after graduation from high school than most other comparison groups, and the differences are statistically significant (table 7). Immediate entrance to postsecondary education is a very strong correlate of B.A. completion:

Delay	Percentage of students earning B.A. within 12 years of high school graduation (standard errors in parentheses)
None	66.3 (.216)
6-15 months	51.3 (.939)
16-27 months	42.6 (1.23)
28-51 months	45.2 (1.19)
52 + months	19.2 (.724)

Why do varsity athletes in major sports enter college with no delay? One can only hypothesize: coaches recruit them and want them on campus in August to start practice, which means they register for courses in September.

Varsity athletes in other sports and performing arts students are even less likely to delay entry to college. The reasons in this case are more traditional: these two groups have higher high school class ranks (table 3), higher SAT and ACT scores (table 4), and higher SES profiles (table 1). This background is more likely to lead to direct entry and completion of the bachelor's degree than any other.

Safety Net

The evidence of the AIR studies leaves no doubt that varsity football and basketball players have at their disposal a much broader safety net of supportive services than other undergraduate students. (The NSL 72 archive does not include this kind of information.) It is much easier for these athletes to receive help from tutors, academic counselors, teaching assistants, and professors than for other groups of students (AIR 1988a, 44). And among black varsity football and basketball players, whether at predominantly white or predominantly black colleges, the perceived ease of access to this supportive service network is even greater (AIR 1989a, 34-35).

Although one might question the motivation for this safety net, it certainly contributes to a higher graduation rate than would otherwise be the case given the academic backgrounds of

varsity football and basketball players. As the following section demonstrates, the safety net steers these athletes along comparatively easy paths to degrees.

The College Record of Varsity Athletes: A Shadow Falls

The degree completion rate of college varsity athletes in major sports is only part of the story. When we begin to examine other factors in these students' college careers, the fundamental paradox of that completion rate--namely, that the athletes finish despite significantly less adequate secondary school preparation--is unmasked.

The second major set of findings of this study may be stated as follows: college varsity athletes, particularly football and basketball players, may complete bachelor's degrees at a respectable rate, but it takes them longer to do so than other groups, their grades are lower, and their curricula are, to put it mildly, less demanding along the way.

Time to Degree

Table 8 shows the time-to-degree data. It is immediately--and strikingly--obvious that among students who earn bachelor's degrees, a far lower percentage of varsity athletes (no matter what sport is at issue) than other groups complete the degree in 4 1/2 years following high school graduation. It is also obvious that varsity athletes catch up to most of the other groups by 5 1/2 years.

Given these differences, it is not surprising to find that varsity football and basketball players are the group most likely to earn more than 132 undergraduate credits (table 9), although I cannot explain the lower figure for varsity athletes in other sports. Credits are proxy measures for time, and students receive credits for passing courses. If a student's cumulative grade point average (GPA) within his or her major does not meet minimum standards, the student either stops or drops out of college or continues taking courses at a reduced load (and earning credits) until the standards are met. Varsity football and basketball players tend to have lower GPAs than do other students (see below), hence the chances are greater that they will earn more credits along the way to the bachelor's degree. Even slightly lighter credit loads (e.g., 13 credits per semester as opposed to the 15-credit norm) will produce the same result. While coaches may have found ways ("red-shirting" being the most common) to stretch out eligibility to 5 years,[10] the more critical factor influencing what happens to varsity athletes after they leave college is what they study along the way.

What Did They Study?

Whitner and Myers's (1986) portrait of a college athlete provides typical anecdotal guidance: "Because Mike was an entering freshman and an athlete, the difficulty of his course load was somewhat below that of most entering freshmen," with Mike himself expecting that college would be "just like high school. If you were good in your sport--they would pass you" (pp. 665, 662).

There are a number of ways to describe the college curricula of varsity football and basketball players. One way relates to their comparatively weak high school preparation, which indicates that they might need remedial courses in English and math in college. The high percentage of these athletes who took remedial courses should surprise no one:

Group	Percentage taking remedial English	Percentage taking remedial math
Varsity: major	32.9 (2.137)	35.6 (1.992)
Varsity: other	17.3 (1.378)	29.9 (1.489)
Performing arts	18.2 (.763)	25.9 (1.227)
Intramurals	14.6 (.624)	20.4 (.776)
Nonathletes	13.5 (.341)	19.2 (.339)
Everybody else	24.7 (.278)	32.2 (.363)
All	20.3 (.203)	27.1 (.249)

NOTE: Standard errors are in parentheses.

A second way to describe the curricula of varsity athletes is in terms of the specific courses that account for the largest proportion of the students' total earned credits. How do athletes--compared with other groups of students--use their academic time? The data for this analysis are presented in table 10, which lists all course categories that accounted for at least 0.5 percent of the total credits earned by any group of students in the NLS 72 college sample.

The 43 course categories (out of 1,037 possible) listed in table 10 accounted for 37.6 to 56.3 percent of the total curricular time of each of the six groups.

In general, these figures show a very high degree of common curricular concentration. But other than performing arts students (particularly music majors), varsity basketball and football players had the most concentrated common curriculum. That is, they did more of their undergraduate work within the boundaries of a relatively small number of courses than students in four of the five other groups under examination.

On the other hand, performing arts students took more of their undergraduate work within a small number of fields than any other group of this analysis. Indeed, it is apparent that, compared with varsity athletics of any kind, performing arts are far more co-curricular than an extracurricular activity. After all, one can major in performing arts, whereas it's hard to "major" in football--even though, as some will argue, it can be done.

The analysis of curriculum for any subgroup of students must take undergraduate major into account. In comparing the curricula of varsity football and basketball players with the curricula of performing arts or intramural sports participants, for example, major tells much of the story.

Table 11 presents the undergraduate majors of NLS 72 students who earned bachelor's degrees. It appears that varsity football and basketball players majored far more heavily in education and engineering than other groups, but the figure for engineering is an anomaly, a byproduct of the extremely small universe of players.

These aggregate data in the table mask other important distinctions. For example, it is useful to consider the percentage of varsity football and basketball players who majored in disciplines directly connected to sports:

Physical education (education)	18.5%
Health sciences: physiology	2.5
Recreation	2.3
Health, physical education, recreation (allied health)	0.7

Thus, 24 percent of the varsity football and basketball players majored in fields directly bearing on their extracurricular work. These students earned 15.0 percent of their undergraduate credits in sports-related fields, distributed as follows:

Physical education activities	5.3%
Physical or health education (education)	3.3
Anatomy, physiology, kinesiology	2.3
Personal health	2.2
Health or physical education (allied health)	0.9
Recreation	0.9
Other sports subjects	0.1

That is, roughly one of every seven academic hours spent by varsity football and basketball players in college was in this de facto sports curriculum. This is an average. The range is 4 to 73 percent.

In contrast, "seniors" in the AIR study show a mean of 6 to 7 percent of earned credits in the combined curricular categories of physical education activities, physical education: theory and coaching, sports management, and sports medicine and physical therapy (AIR 1989b, 24). But there is no doubt that other sports-related credits in the AIR sample are buried in some of the very general categories used (e.g., "biological sciences" or "professional occupations"). (I wonder, for example, where recreation or the standard Anatomy and Physiology service courses fall in the AIR taxonomy.)

In addition, the following courses all consumed higher percentages of undergraduate time for varsity football and basketball players than for any other group in this study:

	Varsity major	Performing arts	Intramurals
Total	11.7%	6.8%	7.6%
Remedial English	1.0	0.6	0.4
Basic communication and speech	1.9	1.1	1.0
Regular English composition	3.4	2.9	3.1
Remedial math	1.7	0.9	0.6
Personal development	0.9	0.3	0.4
Vocational: trades, office	2.8	1.0	2.1

In other words, varsity football and basketball players spent, on average, 4 percent more of their undergraduate time on basic skills and the kind of vocational courses usually not associated with baccalaureate degrees than students in either of two key control groups.

The functional-vocational and sports curriculum courses add up to 26.7 percent of the undergraduate credits of all varsity football and basketball players, whether or not they earned any degrees. In addition, this group earned a higher percentage of credits (15.2 percent) in introductory courses in humanities and social sciences than any other group. The curriculum of these athletes is not demanding, although it is more diversified than that of performing arts students.

Some 54 percent of performing arts students majored in fields directly related to their artistic activities:

Music education	16.4%
Music	16.2
Drama	9.8
Music performance (conservatory)	5.7
Religious music	2.7
Speech	2.0
Dance	0.6
Music theory	0.6

It is thus not surprising that performing arts students, as a group, spent much more of their undergraduate time in a very bounded set of fields than do varsity athletes. Performing arts students earned 29.4 percent of their total undergraduate credits in music (including music education, musicianship, theory, literature, and history), drama (including stagecraft, history, and criticism), public speaking, and dance (including dance education and history of dance). In addition, they earned 5.8 percent of their credits in other education courses (a higher percentage than varsity athletes in major sports, though the two groups have similar ratios of education majors).

Academic Performance

If we use GPA as a proxy, the varsity football and basketball players as a whole performed less well in college than they did in high school (despite their relatively undemanding curriculum), though among students who earned a bachelor's degree, the GPA of varsity football and basketball players compares somewhat more favorably. The following table shows the data for GPAs:

	All		B.A. recipients	
	Mean	S.D.	Mean	S.D.
Varsity: major	2.65	.57	2.87	.44
Varsity: other	2.89	.51	2.99	.46
Performing arts	3.07	.44	3.14	.43
Intramurals	2.69	.70	2.87	.46
Nonathletes	2.74	.76	3.07	.47
Everybody else	2.80	.55	2.96	.45
All	2.79	.63	2.99	.46

In the sample as a whole, varsity athletes (and performing arts students, in particular) evidence less variance (i.e., smaller standard deviations) in undergraduate performance than the intramural group and nonathletes. Among students earning bachelor's degrees, however, all groups show similar variability.

The intramural group does not perform as well as one might expect given its relative SAT and ACT scores and high school class rank. Two factors account for this mediocre showing. First, the proportion of women in this group is lower (15 percent) even than among varsity athletes in major sports (17 percent). Women have higher college GPAs than men across the board (i.e., no matter what they study). The lower the representation of women in any group, the lower the mean GPA (women are overrepresented among performing arts students and in the nonathletes category). Second, students in the intramural group study more science and math (23.8 percent of their total credits) than any other group, and grades in college science and math tend to be lower than those in other fields.

Varsity Athletes at Age 32: An Economic Success

The most frequent criticism of big-time college sports is that they exploit athletes, using them to entertain everyone else without providing them with an education that will help them succeed after college. The popular image of the former college athlete is someone barely able to read and barely existing on skid row.

The NLS 72 archive allows us to evaluate this contention and image with fairly hard data. If we look at basic economic outcomes--variables such as unemployment, home ownership, and earnings--it is obvious that varsity football and basketball players of the NLS 72

data base were rewarded handsomely for the time they spent in higher education, whatever they did with that time.

This major finding bears repeating: at least in the first decade of their worklives, ex-varsity football and basketball players do very well economically, whether or not they earned college degrees. As table 12 demonstrates, this group experienced less unemployment between the ages of 25 and 32 than virtually all their peers, and table 13 indicates that the average annual earnings of these athletes were comfortably above the mean for students who attended 4-year colleges. Data on the percentage of former students who owned homes at age 32 also indicate that ex-varsity football and basketball players do well financially:

	All
Varsity: major	77.1% (1.71)
Varsity: other	77.0 (2.04)
Performing arts	60.9 (1.19)
Intramurals	68.7 (.637)
Nonathletes	59.1 (1.01)
Everybody else	66.4 (.421)
All	64.6 (.387)

NOTE: Standard errors are in parentheses.

Given the fact that the football and basketball players were most likely of all the groups to come from families in the lowest SES quartile, these data suggest a positive relationship between participation in varsity sports and economic mobility. Other analyses indicate, however, that, for the entire universe of this study, parents' SES, gender, and SAT scores do not correlate with home ownership rates at age 32, whereas race, high school class rank, and college varsity status do.

In contrast to this economic success story for athletes, performing arts students experienced the highest incidence of unemployment, the lowest earnings, and the second lowest rate of home ownership of all student groups in this study. Given the fact that they tended to come from high-SES brackets, they experienced downward economic mobility. This outcome should not be surprising in light of the nature of the labor market for performing arts talents. Would-be professional athletes are sorted out of the market at a comparatively young age, but would-be professional actors and musicians can maintain their dreams and efforts for decades. Can it be said that performing arts students, and not varsity athletes, are the truly exploited?

"Exploitation" is a very strong judgment that can be interpreted in various ways. Is the reference point current status or future status? Is it economic, social, or spiritual? Does the judgment take informed individual preference, choice, and consent into account? What promises or expectations play a role in the judgment?

If we promise varsity football players that if they will spent 30 to 60 hours a week in season entertaining us for 4 to 5 years of their lives, they will get degrees, not have to worry about finances along the way, and learn how to use their status as varsity athletes to leverage stable jobs and decent salaries, have we exploited them--particularly if they could not get those jobs and salaries any other way? Have we exploited even those students who aspired to be professional athletes? I, for one, do not think so. And if stable jobs and decent salaries are all these people sincerely want, then the trade-off may be fair (I am leaving aside the equally serious question of whether universities ought to be involved in such trades).

Varsity Athletes at Age 32: Another Shadow Falls

Usually, however, people want more than basic economic benefits from life and reason that an investment of 4 or 5 years at a college or university should provide that something more. And in this respect, our judgments of the success of varsity athletes in the Class of '72 must be muted.

For example, they are the least likely of any group to claim that their higher education was relevant to their work:

Varsity: major	22.4%	(1.63)
Varsity: other	33.5	(2.57)
Performing arts	27.6	(1.25)
Intramurals	23.8	(.895)
Nonathletes	25.4	(1.31)
Everybody else	28.3	(.618)
All	27.0	(.553)

NOTE: Standard errors are in parentheses.

They are also the only group (table 14) that claimed to work less with ideas than with both people and paper at age 32. Given that the future economy will run on ideas and information, this factor may put ex-varsity athletes at a disadvantage. In view of their academic records, however, it is not surprising that they work less with ideas.

Indeed, job stability and early career earnings may mask future difficulties. Table 15 compares occupational expectations at age 19 and eventual occupations at age 32. The data show that ex-varsity football and basketball players were more likely than at least three comparison groups to assume lower SES positions (clerical worker, crafts worker, operative, laborer) than they had planned. Although job stability and wages in these occupations may compare favorably at age 32, there is less mobility, and economic comparisons with other groups would probably be less favorable at age '0.

A degree of realism may have set in among varsity athletes in recent years. The AIR study (AIR 1988a) found that football and basketball players in the late 1980s expected to

have lower SES jobs at age 40 than other groups of students in the study sample. The NLS 72 data suggest that these lower expectations are in line with reality.

Tables 16 and 17 provide more detail on the occupations and industries in which the groups worked at age 32. Along with data previously cited, these tables reveal the fundamental paradox of seemingly benign economic outcomes for varsity athletes, particularly those in major sports.

Note, in particular, that ex-varsity football and basketball players were the least likely of all the groups to have jobs in the occupational category "artist, athlete, or entertainer" (table 16).

Occupations do not match industries very neatly. Why is it, for example, that although 13.3 percent of the varsity football and basketball players claimed to be schoolteachers, only 9.2 percent worked in educational and cultural services? "Schoolteachers," as an aggregate category, covers a broad spectrum of occupations in schools, and it is highly possible that a third of the ex-varsity athletes worked as school administrators, hence listed their industry as "public administration."

Former varsity football and basketball players were more likely than any other group to describe themselves as "craftsmen": roughly one out of eight. The crafts they worked at were likely in the construction trades, in which the varsity football and basketball players also concentrated more than the other groups. Overall, these data do not imply that ex-football players tend to be highly paid hod-carriers at age 32, but they certainly should encourage us to think carefully before we pass judgment on the full extent of their economic success.

What Is This Chapter Really About?

This story is ultimately about the promises we make to all students in higher education, and even beyond that, about the integrity of the enterprise. It is also about the benchmarks by which we measure the fulfillment of those promises.

A great deal happens to individuals after they leave college (with or without degrees) that is beyond the control of the institutions they attended. But essential to the basic promise of higher education is a human capital ideology: higher education leads to high payoffs--economic, social, cultural, and spiritual--and the more education, the greater the payoffs. The correlate of this promise is that it doesn't happen by osmosis: it requires student effort in college-level academic work and involvement in the life of a college community. In addition, there is a more proximate promise concerning the credentialing function of colleges, the relationship between academic work and degree.

The promises, whether implicit in popular conception or explicit in college catalogues, are a matter of trust. And when they are publicly promulgated, they become a matter of *public* trust.

It is for this reason, in part, that national legislation is pending. National legislation is not about 291 institutions out of 1,800 4-year colleges and universities in the United States. National legislation is not about the relatively small number of college students who play varsity football or basketball. National legislation is about everybody; and whatever form that legislation takes, it is sincerely motivated to remind colleges of their normative function in our society and their ethical responsibility to keep the promises they make to students.

Notes

1. S. 580 (1989), the Student Athlete Right-to-Know Act, was predicated on the assumption that a prospective varsity athlete will select a college on the basis of the prospects for graduation, as indicated by the graduation rates of varsity athletes who previously passed through the institution. The law would require the colleges to report these rates. The final version of this bill, which is in conference as of this writing, is called the "Student-Right-to-Know and Campus Security Act," and adds reporting requirements for graduation rates for everyone at a college, campus crime statistics, and campus security policies. Sponsors describe this bill as a consumer information act.

2. The NCAA data define "graduation rate" as a ratio of students who graduated in a given year (regardless of precisely when they graduated during that year) to those who entered 5 calendar years earlier (regardless of precisely when they entered during that year). It is thus possible for the period of attendance to range from 4.1 to 6 full years. Also, the only athletes for whom this graduation rate is reported are "*recruited* student-athletes" [italics mine], and it is not clear at all what percentage of students who wind up on varsity teams are "recruited." The graduation rates for recruited student-athletes are compared with the graduation rates for all students--which is not the right comparison (nor is it clear whether "all students" includes the recruited student-athletes). Only when graduation rates are presented by sport is the denominator of the basic equation expanded to include transfer students explicitly. It is thus not clear whether the basic graduation rate applies to athletes who attended one and only one college. One could go on. The virtues of the NCAA data, however, are that they differentiate by geographical region, institutional control, and institutional size. In this respect, they are a significant improvement on previous NCAA-sponsored studies (see, e.g., Chelimsky 1985).

3. It is difficult to interpret the Carnegie data because the random sample of students was designed to represent different institutional types according to the 1976 Carnegie Classification, and it appears that specialized institutions were excluded. For example, neither West Point nor Rensselaer Polytechnic nor the Rhode Island School of Design is in the Carnegie sample. Nonetheless, the data are a decent benchmark, even though the sample is not as naturalistic as that of the NLS 72. At the same time, both the Carnegie and the NLS 72 data render suspicious the claim of a 30.6 percent participation rate in intercollegiate athletics in the Cooperative Institutional Research Project's 1982 followup survey of 1978 freshmen (Green et al. 1983). The senior author of that study admitted that students who had participated in any kind of organized college sports, including intramural, might well be included in this figure because of the way the question was grouped with others.

4. Originally, there were 26,000 titles under the code Physical Education: Activities. Of these, 1,100 were sorted into new Recreational Activities categories such as Fishing and Fly Casting, Horsemanship, Yoga, and Self-Defense (judo, karate, etc.). Another 2,100 were sorted into a new category we created for Aerobics, Jogging, Bodybuilding under Health-Related Activities. Another 1,300 that did not belong in either Recreational Activities or Health-Related Activities ranged from abbreviations for courses in physics to physical therapy

(which should be under Allied Health) to physical education for schoolteachers (which should be under Education) to the history of sport (classified in a new interdisciplinary code, Sports and Leisure Studies) to English literature and agriculture (stranger things happened in the original coding of the NLS 72 transcripts).

5. The six attendance patterns in which the 4-year college experience dominates (and the percentage of all NLS/PETS students in these categories) are as follows.

(1)	Attended community college and earned associate's; transferred to 4-year college and earned bachelor's.	3.4 percent
(2)	Attended community college and earned more than 10 credits, but did not earn associate's; also attended 4-year college and earned bachelor's.	3.3 percent
(3)	Attended community college and earned associate's; also attended 4-year college and earned at least 30 credits but did not earn bachelor's.	1.7 percent
(4)	Attended both community college and 4-year college and earned more than 10 credits from each type of institution, but did not earn any degree.	2.7 percent
(5)	Attended only 4-year college, whether or not degree was earned.	49.3 percent
(6)	Other patterns, such as associate's degree earned after bachelor's and associate's degree earned from 4-year college (these two account for 70 percent of the cases in this category).	4.1 percent

6. The choice of weight depends on (a) the source of the variable(s) under discussion and (b) whether standard errors were generated. In general, Weight 1 is used for variables derived from the PETS Sample (e.g., college grade point average or percentage of credits earned in a particular course) and in most cases (except those involving the fifth followup) requiring standard errors. Weight 3 is used for variables derived from any of the NLS 72 surveys up to and including the fourth (1979) followup (e.g., scholarships, career plans at age 19). The FU5 weight is used in the analysis of variables included in or constructed on the basis of the fifth (1986) followup (e.g., occupation, industry, earnings). These weights were constructed by the contractors for the various NLS 72 databases. They are described in Jones, Baker, and Borchers (1986).

7. The differences between the AIR transcript sample and the students in the NLS 72 transcript sample are considerable. The numbers of students in various categories in these samples are as follows:

	NLS 72	AIR
Total	8,101	2,077
Varsity: major	134	921
Varsity: other	93	608
Performing arts	310	[131]
Extracurricular	0	382
Other black students	809	166
Other Hispanic students	249	0
Others	6,506	0

I am indebted to Robert Rossi, director of the AIR study, for the AIR figures. The subset of performing arts students in the AIR sample is imputed at 37 percent of the 382 extracurricular students. It is obvious that the NLS 72 cohort had far fewer athletes and far more of everybody else--but that's the way it is in any generation of college students.

8. The following relationships between SES and the two academic performance variables, for all students in the sample, need little comment other than to remind the reader that we converted ACT scores to the SAT scale:

	Mean Score on SAT/ACT (S.E.)	Mean class rank (S.E.)
Highest SES quartile	1,005 (3.58)	63.6% (.422)
Middle two SES quartiles	922 (3.28)	58.9 (.365)
Lowest SES quartile	853 (6.01)	56.2 (.590)

9. In fact, one of the most significant revelations of the NLS/PETS is that among B.A. recipients, the graduate school entry rate is highest for Hispanics, and the graduate degree completion rate is highest for blacks. The problem is that a much lower percentage of Hispanics and blacks complete the B.A. than whites. I have argued elsewhere (Adelman 1990) that if we are concerned with black and Hispanic participation in graduate education, the critical task is to increase the baccalaureate completion rate: do that, and we will witness a geometric increase in the proportion of black and Hispanic graduate students. There are other issues involved, of course, such as gender and field distributions.

10. Red-shirts (freshmen who practice but do not play with a team) are still eligible for 4 years once they begin playing. It is thus possible for graduate students to be members of varsity teams, and, indeed, there were a few such cases in both the NLS 72 group and the AIR study. Red-shirting is a risk-free nurturing strategy, a common practice whereby an athlete's skills and strength are improved without losing a year of playing time.

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Table 1.--The demographics of the six groups

Demographic variable	Varsity: major	Varsity: other	Performing arts	Intramurals	Nonathletes	Everybody else
Race and ethnicity						
White/Asian	79.0% (1.89)	89.4% (1.54)	91.9% (.818)	93 3% (.478)	90.2% (.256)	88.7% (.245)
Black	18 0 (1.59)	6.5 (1.59)	6.4 (.825)	4.5 (.313)	7 1 (.205)	8.7 (.228)
Hispanic*/ Native American	3 0 (1.33)	4.1 (.151)	1 7 (.038)	2.3 (.295)	2.7 (.158)	2.6 (.085)
SES						
Low	17.7 (1.39)	5 9 (.725)	7.6 (.541)	11.5 (.533)	13.0 (.377)	13.4 (.236)
Mod	49.6 (1.76)	37.1 (1.62)	40.4 (1.21)	40.9 (.985)	42.5 (.587)	43.8 (.320)
High	32.6 (1.76)	57.0 (1.73)	51.7 (1.28)	47.7 (1.24)	43.1 (.569)	42.1 (.347)
Sex						
Male	82.7 (1.41)	78.8 (2.28)	38.3 (1.22)	85.2 (.821)	45 0 (602)	51.0 (422)
Female	17.3	21.2	61.7	14.8	55.0	49.0

* Hispanics may be of any race.

NOTE. The universe is all students who met the college attendance criteria described in footnote #5. N = 8,101. Standard errors are in parentheses. Because of rounding, percentages may not add to 100.

SOURCE: NLS 72 Special Analysis Files.

Table 2.--High school curricula

Time and area of study	Varsity: major	Varsity: other	Performing arts	Intramurals	Nonathletes	Everybody else	All
< 3 semesters of foreign language	68.3%	39.9%	42.8%	47.9%	46 6%	52.6%	50.1%
< 5 semesters of mathematics	54.3	56.3	62 1	39.2	54.5	53.6	52.9
< 5 semesters of science	70.5	55.9	80.6	55.2	65 1	64 8	64.7
> 2 semesters of trades	15.3	10.5	3.3	9 9	7.5	6.9	7.4
> 2 semesters of business	19.5	10.2	12.3	13.1	16.5	19.1	17.4
> 4 semesters of fine and performing arts	3.1	12.9	63.1	10 5	16.9	15.6	17.2

NOTE The universe is all students who met the college attendance criteria described in footnote #5 and whose NLS 72 records include a high school transcript. N - 8,101.

SOURCE: NLS 72 Special Analysis Files

Table 3.--High school class rank

Group	Mean rank	S.E.	In highest quintile	S.E.	In lowest 2 quintiles	S.E.
Total	67.2%	.328	38.7%	249	16.6%	192
Varsity: major	62.8	.023	29.6	1 74	19 6	1.60
Varsity: other	68.2	.026	47.5	1 90	13 0	1.38
Performing arts	73.8	.013	50.5	.997	12.0	.488
Intramurals	65.9	.010	35.6	.700	16 1	.773
Nonathletes	67.6	005	40.4	452	18.3	.356
Everybody else	66.7	.004	37.5	.32?	16.2	.250

NOTE: The universe is all students who met the college attendance criteria described in footnote #5 and for whom high school class rank was known. N = 7,245.

SOURCE: NLS 72 Special Analysis Files.

Table 4.--SAT and ACT scores

Group	SAT or ACT (converted) ranges				Mean	Standard deviation
	400-700	701-975	976-1148	1149+		
Varsity: major	24.2% (2.42)	42.6% (2.27)	16.1% (1.44)	17.1% (1.60)	913 (22.2)	217
Varsity: other	9.3 (2.51)	29.5 (1.67)	25 5 (1.74)	35.8 (2.18)	1032 (25.6)	216
Performing arts	6.3 (.089)	41 9 (1 03)	32.5 (.90)	19.2 (1.00)	1007 (11.6)	187
Intramurals	5.5 (.469)	37 8 (1 13)	33.8 (.933)	22.9 (.873)	1026 (8 5)	188
Nonathletes	10.1 (.328)	38.1 (469)	28.1 (.463)	23.8 (.437)	1006 (5.12)	215
Everybody else	11.6 (.228)	45.6 (.376)	28.4 (.329)	14.4 (.196)	958 (3.32)	195

NOTE: The universe is all students who met the college attendance criteria described in footnote #5 and whose records include either SAT or ACT scores. N = 6,133. Standard errors are in parentheses. Because of rounding, percentages may not add to 100.

SOURCE: NLS 72 Special Analysis Files.

Table 5.--Highest degree earned

Group	No degree	Certificate	Associates	Bachelor's*
All	32.7%	1.0%	4.3%	62.0%
	(.224)	(.054)	(.099)	(.223)
Blacks	50.2	1.0	3.9	44.9
	(.836)	(.270)	(.334)	(.885)
Varsity: major				
All	31.6	0.7	3.4	64.3
	(1.70)	(.028)	(.054)	(1.74)
Blacks	47.8	0	2.0	50.2
	(4.50)	0	(.187)	(4.64)
Varsity: other				
All	26.9	0	2.7	70.4
	(.171)	0	(.099)	(1.70)
Blacks	48.3	0	0	51.7
	+	0	+	+
Performing arts				
All	20.3	.2	3.2	76.3
	(.916)	(.005)	(.110)	(.926)
Blacks	38.2	0	2.4	59.4
	(2.55)	0	(.144)	(2.64)
Intramurals				
All	29.1	.9	2.7	67.3
	(.814)	(.075)	(.195)	(.825)
Blacks	49.7	3.7	0	46.6
	(3.56)	(.291)	0	(3.70)
Nonathletes				
All	45.6	1.0	3.7	49.7
	(.455)	(.083)	(.153)	(.428)
Blacks	71.1	.5	2.2	26.3
	(1.07)	(.017)	(.445)	(1.22)
Everybody else				
All	27.2	1.1	5.1	66.6
	(.252)	(.070)	(.147)	(.276)
Blacks	41.7	1.1	5.2	52.0
	(1.06)	(.445)	(.497)	(1.10)

* This category refers to all students who earned at least the bachelor's

+ Ns too small for standard error.

NOTE. The universe is all students who met the college attendance criteria described in foot note #5. N = 8,101. Standard errors are in parentheses. Because of rounding, percentages may not add to 100.

SOURCE: NLS 72 Special Analysis Files.

Table 6.--Scholarships, 1972-79

Group	Periods during which scholarships were received: 1972-1974 (summer)	1974 (fall)-1979 only	Never received scholarship
Varsity: major	55.9% (1.67)	12.8% (1.25)	31.3% (1.27)
Varsity: other	47.1 (1.84)	14 2 (.649)	38.7 (1.90)
Performing arts	49.6 (1.58)	18.1 (1.17)	32.3 (1.20)
Intramurals	39 2 (.646)	16.1 (.527)	44.7 (706)
Nonathletes	31.4 (.454)	17.0 (.409)	51.3 (.545)
Everybody else	35.6 (.372)	17.1 (.250)	47.3 (.407)

* These students may also have received scholarships in 1974-1979.

NOTE. The universe is all students who met the college attendance criteria described in footnote #5. N - 8,101. Standard errors are in parentheses

SOURCE: NLS 72 Special Analysis File.

Table 7.--Time of entry to college

Group	Length of delay: No delay	6-15 months	16-27 months	28-51 months	52+ months
Total	82.0% (.178)	7.3% (125)	3.7% (.091)	3 6% (.080)	3.2% (071)
Varsity: maj	89 9 (.626)	6.5 (599)	1 2 (.044)	2.4 (093)	0 0
Varsity: other	91 4 (1.45)	6.6 (1.40)	1.5 (.056)	0 0	0 5 (.453)
Performing arts	90.4 (.648)	4.8 (.109)	1.1 (521)	2.1 (.214)	1 6 (422)
Intramurals	84.1 (.657)	6.3 (.587)	3.1 (.172)	2 8 (.106)	2.9 (244)
Nonathletes	72 1 (.399)	8.8 (.277)	6 5 (.197)	5.4 (180)	7 1 (183)
Everybody else	86.1 (.207)	6.9 (160)	2.5 (.096)	2 9 (114)	1 4 (055)

NOTE The universe is all students who met college attendance criteria as described in footnote #5 and whose transcripts were not missing information on dates of terms in which the student was registered. N - 8,087. Standard errors are in parentheses. Because of rounding, rows may not add to 100

SOURCE: NLS 72 Special Analysis Files

Table 8.--Time to degree: High school class of 1972

Group	Year of bachelor's degree				
	1975-76	1977	1978	1979-80	1980-84
All	60.2% (.228)	19.8% (.213)	7.8% (.147)	7.3% (.163)	5.0% (.131)
Varsity: major	44.3 (2.30)	34 5 (2.30)	9.3 (626)	7.7 (.952)	4.2 (.481)
Varsity: other	43.2 (2.28)	35.9 (1.97)	6.7 (.308)	11.2 (2.03)	3.0 (1.88)
Performing arts	66.5 (1.24)	19.2 (.586)	6.0 (.623)	4.2 (608)	4.1 (.964)
Intramurals	63.5 (1.01)	20.4 (.964)	6 9 (.406)	5.7 (426)	3.5 (.405)
Ncnathletes	61 6 (.725)	16.8 (.412)	7 0 (418)	8.1 (.344)	6.6 (.422)
Everybody else	59.3 (372)	20.2 (.318)	8.4 (.199)	7 4 (209)	4.7 (.161)

NOTE The universe is all students who earned a B.A. and met the college attendance criteria described in footnote #5. N = 4,897. Standard errors are in parentheses. Because of rounding, rows may not add to 100.

SOURCE: NLS 72 Special Analysis Files.

Table 9.--Total undergraduate credits

Group	0-10	11-29	30-59	60-89	90-132	133+
Varsity: major	1.4% (.052)	2.5% (.097)	14.2% (.542)	11.8% (1.44)	35.8% (1.96)	34.8% (1.77)
Varsity: other	0 0	5.8 (1.13)	8.0 (.846)	11.5 (1.32)	52.7 (1.85)	22.1 (1.44)
Performing arts	0 0	1 6 (.301)	5 7 (.521)	11.4 (729)	49 1 (1.29)	32.3 (1 19)
Intramurals	5 5 (276)	4 9 (184)	8 3 (616)	11.3 (421)	55.1 (953)	14 9 (480)
Nonathletes	11.5 (.268)	13 6 (284)	14 3 (.309)	11 6 (207)	39.1 (.451)	9 9 (.255)
Everybody else	2.2 (.101)	5 7 (.131)	8.4 (.180)	11 1 ([illegible])	52.5 (.321)	20.0 (227)

NOTE: The universe is all students who met the college attendance criteria described in footnote #5. N = 8,101 Standard errors are in parentheses. Because of rounding, rows may not add to 100.

SOURCE: NLS 72 Special Analysis Files

Table 10.--Distribution of college credits earned, by course category

Course category	Varsity: major	Varsity: other	Performing arts	Intramurals	Nonathletes	Everybody else
Total*	45.2%	42.8%	56.3%	40.6%	37.6%	39.7%
Phys. ed. activities	3.5	3.3	1.1	.7	0	2.0
English comp: reg.	3.4	2.9	2.9	3.1	3.4	3.6
Phys ed (education)	2.9	1.1	.1	3	0	.6
U.S. hist. surveys	2.6	1.4	1.3	1.7	1.4	1.9
General biology	2.0	2.2	1.4	1.8	1.9	2.2
Intro. economics	1.7	1.9	.5	2.6	1.9	1.6
General psychology	1.6	2.1	1.7	2.0	2.2	2.1
U.S. government	1.6	1.0	.8	1.2	1.0	1.2
Intro. communicat.	1.4	1.2	.9	.9	.8	1.1
Intro. sociology	1.4	1.2	.9	1.3	1.5	1.5
Varsity athletics	1.4	1.0	0	0	0	
General chemistry	1.4	2.3	.6	2.4	2.2	1.9
Calculus	1.3	2.0	.7	2.7	2.6	1.6
Intro. accounting	1.2	1.4	.3	1.6	1.3	1.1
World or western civ	1.1	1.0	1.1	1.1	1.2	1.4
Intro. physics	1.0	1.8	.4	2.1	1.8	1.3
Spanish: elem or int.	1.0	1.4	1.0	1.0	1.0	1.1
English literature	1.0	1.4	1.1	.9	1.0	1.1
Health practices	.9	.4	.3	1	0	.5
Bible studies	.9	.7	1.0	4	4	.6
Intro. geography	.8	.7	.6	.7	.7	.6
Advanced accounting	.8	1.6	.2	1.5	1.1	.9
French: elem or int	.7	.2	1.1	.7	1.0	.7
Business law	.7	.9	.2	1.0	.7	.7
College algebra	.7	.4	.3	.6	.7	.7
Art history	.7	.3	.6	.6	1.0	.8
Kinesiology	.7	.6	< .1	0	0	.2
Anatomy and physiol.	.7	.5	<.1	.2	.4	.4
Music performance	.2	1.2	18.0	.1	.5	.4
Organic chemistry	.4	1.0	0	1.0	.9	.7
Statistics (math)	.5	.8	0	.9	.7	.6
Intro. management	.6	.7	0	1.0	.7	.6
Music theory	.2	.6	6.0	.1	.2	.1
Drama: acting, directing, etc.	.5	0	4.0	.2	.3	.2
Music history: gen.	.4	.2	2.1	.3	.3	.4
Musicianship	.3	.4	1.1	.3	.2	.4
Stagecraft	.3	.3	1.0	< 1	.2	< 1
German: elem or int.	.2	.7	1.0	.4	.5	.4
General geology	.6	.5	.7	.9	.6	.6
General zoology	.6	.4	.2	.6	.4	.5
Humanities: general	.3	.2	.4	.5	.4	.4
Electr. engineer.	.5	.1	< 1	.5	.6	.3
American lit.	.5	.5	.6	.6	.8	.7

* For the 43 course categories listed.

NOTE. The universe is all students who met the college attendance criteria described in foot note #5. N = 8,101.

SOURCE: NLS 72 Special Analysis Files

Table 11.--Distribution of bachelor's degree majors

Major	Varsity: major	Varsity: other	Performing arts	Intramurals	Nonathletes	Everybody else
Business	16.0%	21.6%	3.5%	26.9%	16.3%	15.4%
Education	29.3	15.6	26.6	3.0	5.7	21.8
Engin. or compsci.	11 7	2.5	.2	7.5	7.2	3.9
Phys. sci. or math	3.9	0	2.9	4.6	4.8	4.1
Humanities	5.3	9.6	8.7	2.9	9.0	5.1
Arts	4.5	1.0	36.7	2 2	5.4	2.1
Social science	11.9	20.8	7.1	26.6	19.5	16.5
Biological science	3.7	13.1	1.4	7.3	9.0	5 6
Applied science and science-based services[1]	6.9	5.8	3.1	8.4	11.6	11.8
Other applied and service fields[2]	5.4	8.4	5.6	6.6	8.8	10.3
Other	1.5	1 5	4.3	4.1	2.9	3.4

[1]Includes agriculture, natural resources, nursing, allied health, clinical health sciences, and science technologies.

[2]Includes communications, home economics, library science, recreation, protective services, social work, and public administration.

NOTE: The universe is all students who met the college attendance criteria described in footnote #5 and who earned a bachelor's degree at any time between 1972 and 1984. N = 4,897. Because of rounding, columns may not add to 100.

SOURCE: NLS 72 Special Analysis Files.

Table 12.--Unemployment, 1979-1986

Group	Months neither working nor in school					
	None	<6	6-12	13-24	25-36	36+
			Universe A[1]			
All	51.9% (.380)	12.8% (.380)	9.3% (.159)	8.2% (.138)	6 3% (.121)	11.4% (.203)
Varsity: major	61.1 (2.37)	13.4 (658)	11.8 (2.22)	1.6 (.251)	2.0 (.646)	10.1 (2.18)
Varsity: other	53.7 (2.42)	21 7 (1.17)	10.0 (2.03)	7.6 (2.00)	4.1 (2.13)	2.8 (1.39)
Performing arts	43.2 (1.26)	14.4 (1.01)	8.3 (.438)	9.6 (.329)	15.9 (.885)	8.6 (.498)
Intramurals	63.8 (.638)	15.5 (.513)	8.6 (.445)	6.2 (.433)	2.1 (.208)	3.9 (.485)
Nonathletes	49.0 (.944)	12.6 (1.30)	9.1 (.324)	9.3 (235)	7.0 (.264)	13.0 (415)
Everybody else	51.9 (.380)	12 2 (.231)	9.5 (.228)	8 : (.178)	6.1 (.162)	12.2 (227)
			Universe B[2]			
All	53 5 (.496)	13.9 (.600)	9.2 (.213)	7.7 (.176)	6.1 (.141)	9.5 (229)
Varsity: major	66.3 (2.46)	12.5 (.691)	12.4 (1.70)	1.7 (.352)	2 8 (.903)	4.3 (2.26)
Varsity: other	46.0 (2.72)	23.0 (1.57)	13.0 (2.72)	10.5 (3.00)	5.6 (2.89)	1.9 (.112)
Performing arts	42.5 (1.41)	15.2 (.982)	8.0 (.520)	9.6 (.373)	16.8 (.792)	7.9 (.660)
Intramurals	64.4 (.791)	17.3 (.611)	8.3 (.582)	4.6 (.490)	2.6 (314)	2.8 (.699)
Nonathletes	54.4 (1.70)	15.0 (2.48)	8.9 (.510)	7 9 (367)	5.0 (.335)	8.7 (.393)
Everybody else	52.3 (.486)	12.8 (.304)	9.4 (.284)	8.1 (.234)	6.2 (188)	11.2 (253)

[1]All students who met the college attendance criteria described in footnote #5 and who participated in the fifth (1986) followup survey. N = 5,841.

[2]Universe A minus students without B.A.s. N = 4,057.

NOTE: Because of rounding, rows may not add to 100. Standard errors are in parentheses.

SOURCE: NLS 72 Special Analysis Files.

Table 13.--Average annual earnings, 1984 and 1985

Group	1984	1985
All	$20,578 (.006)	$21,720 (006)
Varsity: major	22,720 (.029)	24,029 (.039)
Varsity: other	28,170 (.016)	29,319 (.023)
Performing arts	13,602 (.021)	15,709 (.019)
Intramurals	24,835 (.008)	26,370 (.013)
Nonathletes	19,555 (.013)	20,517 (.016)
Everybody else	20,785 (.008)	21,895 (.008)

NOTE: The universe is all students who participated in the fifth (1986) followup survey and who met the college attendance criteria (based on transcripts) described in footnote #5. N = 5,841. Standard errors (in parentheses) refer to the log of the dollar figure. Special thanks to Nabeel Alsalam of the National Center for Education Statistics.

SOURCE. NLS 72 Special Analysis Files.

Table 14.--The emphases of work at age 32

Group	Ideas	People	Paper	Things
All	55.9%	75 5%	50.8%	30.0%
Varsity: major	48.7	84.6	51.0	24.4
Varsity: other	58.3	82.3	51.1	28.0
Performing arts	68.1	71.8	45.1	33.6
Intramurals	60.3	74.3	47.2	25.4
Nonathletes	53 4	71.2	47.6	32.5
Everybody else	56.1	77.8	53.2	29.4

NOTE The universe is all students who met the college attendance criteria described in footnote #5 and who provided responses to four questions on the emphases of work in the fifth (1986) followup survey. N = 5,841.

SOURCE: NLS 72 Special Analysis Files.

Table 15.--Occupational expectations at age 19 versus realities at age 32

Occupational category	Varsity: major		Performing arts		Intramurals		Nonathletes	
	Expected	Actual	Expected	Actual	Expected	Actual	Expected	Actual
Clerical	2.8%	12.1%	1.0%	14.0%	1.4%	7.3%	4.6%	15.3%
Craftworker	4.7	12.4	1.1	2.1	3.6	8.7	2 6	5.5
Operative	0	1.8	0	3.4	0	2.5	0.3	3.0
Laborer	0	3.0	0	0.9	0.5	2.2	0.1	0.9
"Manager," propriet.	15.4	14.2	5.7	13.3	14.3	21.6	8.8	16.2
Professional 1*	23.7	18.0	42.1	28.0	32.6	27.1	34.4	30.5
Professional 2*	27.3	8.1	19.1	8.2	29.1	12.6	24.6	9.2
"Buy/sell"	0	11.8	0.2	5.1	1.0	6.8	1.4	6.6
Sch. teach.	14.6	11.2	25.9	18.2	6.4	2.9	9.5	5.1
Other	11.5	7.4	4.9	6 8	11.1	8.3	13.7	7.7

* In 1973, Professional 1 included accountants, artists, nurses, engineers, librarians, writers, social workers, actors, and athletes. Professional 2 included clergy, physicians, lawyers, scientists, and college professors. In 1986, scientists were in the Professional 1 category and librarians in Professional 2. A more elaborate occupational coding scheme was used in 1986.

NOTE: The universe is all students who met the college attendance criteria described in footnote #5, answered the question on expected "kind of work . . . when you are 30" in the first (1973) followup survey, participated in the fifth (1986) followup, and provided information on their occupation in 1985. N = 5,312. The occupational categories for the 1973 survey do not match those of 1986 perfectly. For example, the 1973 category "Sales" covered insurance agents. The 1986 category covers both sides of commercial transactions, but does not include insurance agents. Instead, they are in a category with accountants and stockbrokers that are included here in "Professional 1."

SOURCE: NLS 72 Special Analysis Files.

Table 16.--Occupation at age 32

Occupation	Varsity: major	Varsity: other	Performing arts	Intramurals	Nonathletes	Everybody else
"Manager" **(17.7%)**	16.1%	25.3%	13.6%	21.7%	16.7%	17.8%
Sch.teacher **(9.8%)**	13.3	5.5	16.8	2.8	5.1	12 7
Engin. tech. or sci. **(7.7%)**	8.7	.5	4.7	9.9	10.0	6.5
Nurse or hlth. tech. **(6.2%)**	0	3.4	1.7	3.4	7.2	6.8
"Buy/Sell" **(5.9%)**	12.5	10.6	4.3	7.5	5.5	5.8
Craftworker **(5.4%)**	12.2	4.0	2.2	9.3	5.3	4.9
Office support **(5.1%)**	2.6	9.7	7.7	1.1	8.2	4.0
Account or insur. **(4.9%)**	2.2	6.7	1.3	4.7	5.1	5.1
Other clerical **(3.9%)**	3.5	1.0	3.7	3.7	3.4	4.4
Med. or health pract. **(3.5%)**	4.5	10.7	.2	5.0	4.4	2.9
Coll.teach. etc. **(3.1%)**	2.4	3.5	8.4	3.5	2.5	3.0
Other profess. **(3.1%)**	4.9	2.0	2.7	1.5	3.0	3.4
Fin. serv. supp. **(2.7%)**	5.1	0	1.9	2.1	2.9	2.7
Computer related **(2.6%)**	1.9	1.2	1.3	3.8	3 0	2.3
Operatives **(2.3%)**	1.9	1.6	3.5	2.4	2.8	2.0
Art., athlet., or enter. **(2.3%)**	.6	3.1	8.0	.7	1.8	2.4
Personal serv. **(2.2%)**	1.3	3.4	10.9	2.1	1.6	1.8
Lawyer or Judge **(1.8%)**	1.2	1.3	.7	4.3	2.0	1.5
All others **(9.8%)**	3.1	6.5	6.4	8.8	9.5	10.7

NOTE: The universe is all students who met the college attendance criteria described in footnote #5, and in the fifth (1986) followup survey indicated an occupation in 1985. N = 5,312. Occupations are listed in order of greatest frequency in the universe (percentages shown in bold). Because of rounding, columns may not add to 100.

SOURCE: NLS 72 Special Analysis Files.

Table 17.--Industry of employment at age 32

Industry	Varsity: major	Varsity: other	Performing arts	Intramurals	Nonathletes	Everybody else
Construction	8.6%	4.4%	2.0%	4.9%	2.3%	3.0%
Manufacturing: durables	6.8	4.1	4.9	9.3	9.0	7.3
Manufacturing: nondurables	7.1	1.4	2 4	6.2	4.5	3 8
Natural resources[1]	5.2	0	.8	2 8	4.0	3.3
Communication	4.1	5.4	6.7	2.9	8.1	4.5
Retail and wholesale	12.8	6.7	19.2	15.0	9.9	10.6
Financial services[2]	5.7	14.4	2.1	7.0	6.8	7.0
Entertainment and recreation	2 0	3.0	7.9	1.3	1.4	3.0
Professional health services	3 8	15.3	4 1	9.8	13 2	10.4
Other professional services[3]	2.7	5.9	6.7	3.9	3 5	5.0
Education and cultural services	9.2	5.8	22.9	4.4	8.1	12 3
Public administration	14.7	11.9	6.4	11.7	7.7	9.9
Legal servoces	1.2	1.3	.3	4.0	2.5	1.6
Other	16.1	18 4	13.6	16.9	19.0	18.3

[1]Combines agriculture, forestry, mining, and extraction.
[2]Includes real estate, banking, insurance, brokerage, etc.
[3]Includes Research and Development, consulting, welfare services, religious organizations, etc.

NOTE. The universe is all students who met the college attendance criteria described in footnote #5 and provided information concerning the industry in which they worked in the fifth (1986) followup survey. N = 5,312. Because of rounding, columns may not add to 100.

SOURCE: NLS 72 Special Analysis Files.