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Influences of intercollegiate athletic participation on the psychosocial development of college students

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Influences of Intercollegiate Athletic Participation on the Psychosocial Development of College Students

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Education

by

Frank Joseph Ryan

1990

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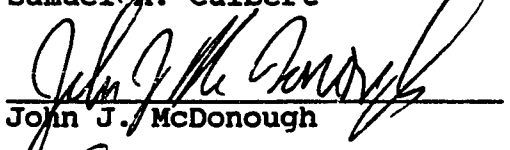

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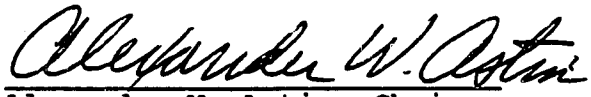

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1990

TABLE OF CONTENTS

LIST OF TABLES

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ABSTRACT OF THE DISSERTATION

Influences of Intercollegiate Athletic Participation
on the Psychosocial Development of College Students

by

Frank Joseph Ryan
Doctor of Philosophy in Education
University of California, Los Angeles, 1990
Professor Alexander W. Astin, Chair

This longitudinal study examined the effects of various forms of athletic participation on a variety of cognitive and affective outcomes. Samples included 780 student-athletes and 757 non-athletes who were assessed as entering freshmen at a variety of institutions in 1984 and followed up four years later in 1988. An input-environment-output (I-E-O) model and blocked stepwise multiple regression analyses were used to apply Astin's involvement theory to intercollegiate athletics, which was viewed as a form of involvement in college life.

Following the theory of involvement, intercollegiate athletic involvement was hypothesized to have a positive influence on satisfaction with the overall college experience, drive to achieve, competitiveness, degree aspirations, the acquisition of interpersonal and collaborative skills, and the development of leadership abilities. These hypotheses were generally supported.

It was also hypothesized that scholarship athletes who compete in revenue sports at NCAA Division I institutions would a) experience emotional distress in attempting to cope with the many competing demands placed on their finite resources of time and energy; b) be more prone to materialistic values; and c) be more likely to be academically dishonest. Results supported hypotheses b and c, but not a. In addition, both intramural and intercollegiate sports participation were found to have a negative impact on college GPA.

Intramural sports participation appears to have a positive effect on student retention, degree aspirations, and satisfaction with the college experience; it has a negative effect on academic honesty and college GPA. Because of the substantial confounding of intramural and intercollegiate participation (78% of college athletes also play intramural sports), future studies should be designed to separate the effects of these two forms of sports involvement.

Chapter 1

Statement of the Problem

In recent years there has been much discussion about the role, contribution, and proper functioning of intercollegiate athletics within American higher education. Media accounts enumerate scandals, catapulting college sports into the spotlight in a very negative way. Sensationalistic descriptions of illiterate and drug-abusing athletes dominate public perception of college sports. Physical violence, antisocial behavior, sexual assault, recruiting violations, illegal cash payments, and academic fraud are proffered as evidence of a corrupt system which overemphasizes winning to the detriment of educational values.

The unfavorable image portrayed in headline stories is vivid and powerful, lending credence to the belief that athletes somehow are not legitimately engaged in the educational enterprise. Reports in the media focus almost exclusively on the negative, expressing outrage and indignation. These sensationalistic reports portray only an approximate reality, stereotyping what the student-athlete is "really" like.

Apologists for college athletics, on the other hand, insist that the problems are exaggerated and are not nearly as pervasive as cynics believe. They claim that athletic participation in college actually produces favorable growth in students, promoting desirable personality and character development. The critical investments of time and psychic energy in collegiate athletics are thought to be virtually the same across various sports and competitive levels, yielding similar beneficial outcomes. Media scandals are seen as overstated,

highly-visible magnifications of deviant "outlier" events which do not normatively represent the athletic environment.

This optimistic point of view diverges sharply with sordid impressions created by news reports. Conflicting opinions have given rise to a long-running feud between critics and supporters of intercollegiate athletics. The resulting complex and controversial issues thus need to be examined critically and considered carefully to locate a fair, balanced perspective.

A serious questioning of the purported educational values of college athletics is under way. This movement is reminiscent of the 1920's, when the Carnegie Foundation Report officially investigated problems in American college athletics (Savage, 1929). Since then a series of "crises" has ensued, as debates, symposia, and periodic calls for reform can be found in higher education literature over the past 60 years. Each reform movement has tried to establish a national consensus regarding the appropriate connections between sports and higher education.

College Impact

One way of looking at issues relating to athletic participation is to consider them as a special subset of problems that fall under the umbrella of college impact studies. What are the typical effects of college on students, both cognitive and affective? Higher education research during the 1970's and 1980's has particularly focused on student outcomes, attempting to link them to specific environmental factors. One of the major effects of college seems to be increased interpersonal self-esteem, enhanced by the degree of exposure to college influences (Astin, 1977). College seems to strengthen students'

competency, self-esteem, artistic interests, liberalism, hedonism, and religious apostasy and to weaken their business interests (Astin, 1984).

Time spent on campus interacting with other students appears to be directly related to this process, as most changes in attitudes and behaviors appear to be attributable to peer-group effects (Astin, 1985). The use of campus resources and high levels of quality of effort have also been shown to promote personal growth and development (Pace, 1984). Nearly all forms of involvement in college-related activities have been linked to positive changes in student development. Athletic participation, of course, can be regarded as a form of involvement that includes peer interaction, high quality of effort, and use of campus resources. However, students may benefit more from involvement in certain college activities more than others. Determining which types of involvement have particular effects on student outcomes (and why) is one of the major tasks of college impact research.

Student Development Theory

The development of the student as a person is the central aim of all education (Sanford, 1962). One unifying purpose of higher education, then, is to facilitate human development, using a variety of programs and resources (Chickering, 1981). Thus the study of college outcomes involves more than simply tracking intellectual attainment; it is broadly inclusive, concerned with the multi-dimensional development of the "whole person" in any of the college sub-environments (Bowen, 1977).

A major purpose of most institutions of higher education is to develop the multiple talents of its students to their maximum potential (Astin, 1985). What

educational experiences are most effective for enhancing students' educational growth? How does athletic participation compare with other forms of student involvement in terms of impact on student development? This question is of special interest, since athletics enlists the participation of a sizeable proportion of the college student population. An estimated 31% of college students participate in intercollegiate athletics (Astin, Green & Korn, 1987).

Athletics as Co-curriculum

The extra-curricular activities of campus life form an integral part of the college experience, particularly when viewed as contributing to the institution's primary educational mission to educate and develop the whole person (Marmion, 1987). The co-curriculum can serve to initiate, accelerate, or inhibit developmental change in students, rounding out the educational experience (Sanford, 1962). As an extension of the academic program, college athletics is a part of this co-curriculum (Shriberg, 1984). In fact, it lies squarely at the intersection of higher education and student development by reason of its co-curricular role. Its importance is evidenced by the large numbers of students who participate.

Collegiate sports constitute a unique "athletic environment," complementing the regular, customary curriculum with additional learning experiences. These non-traditional sources of campus involvement may serve as comparable, alternative, or "even better" substitutes for conventional collegiate experiences (Ryan, 1989; Stone & Strange, 1989). As such they can be valuable in serving the educational interests of the academic community (Cady, 1978), assisting in the development of the whole person socially, academically, and

personally (Gerdy, 1987). When conducted in a manner consistent with the educational mission of the institution, athletics can be an integral, exemplary component of a multifaceted process of talent development (Marmion, 1987; Wacker, 1983)). Athletics should contribute favorably to student growth and should be evaluated accordingly (B. Davis, 1987; W. E. Davis, 1979). While the need for integration of purpose within the co-curriculum of higher education has been generally accepted, just how this is to be accomplished continues to be a matter of considerable debate (Chu, Segrave, and Becker, 1985; Coakley, 1978; Dickason, 1979; Francois, 1979; Lopiano, 1988; McKristal, 1965; Meggyesy, 1971; Michelson, 1980; Nelson, 1983; Oliva, 1987; Porto, 1985; Purdy, 1982; Savage, McGovern & Bentley, 1931; Uehling, 1983).

Nature of the Athletic Environment

What follows here is a brief sketch of the typical environment in which many college athletes find themselves. It is based on the author's knowledge of the literature together with his personal experiences as a coach in several different types of colleges and universities. Some see athletes as privileged characters who receive special treatment and are pampered endlessly by a host of support service programs. These critics emphasize the heroic status, media glory, and adulation showered upon the athlete. But fame is a two-sided coin: living "in a fishbowl" requires the student-athlete to deal with constant unsolicited attention and its concomitant pressures. Celebrity status, in short, can be a major distraction for the college student-athlete.

Tremendous pressures can be involved in attending to both coursework and a sport, as well as to routine collegiate social interactions. The student-

athlete typically has a daily schedule which is rigorous, physically and intellectually taxing, and emotionally stressful. There is little free time available. Tackling two time- and energy-consuming roles creates difficult living conditions and a state of chronic anxiety for many dedicated student-athletes (Nyquist, 1982; Rhatigan, 1984; Sack & Thiel, 1979): How can the demands of both athletics and academics be reasonably satisfied? Are athletes really being exploited, or are they being coddled?

Support networks vary across institutions, but commonly consist of special athletic academic advisors, study hall coordinators, and tutors. Special campus housing is usually made available and a training table provided during the season of sport to ameliorate some of the stress from physical discipline and mental exertion. Classes, practice, meals, study hall, fatigue, and sleep, not to mention travel and competition, make up the athlete's busy, regulated routine.

In this sub-environment the athlete can develop a strong personal identification with his/her school as a community, as well as a sense of belongingness to an exclusive group, the sports team. Members of a team, molded together with a ready-made identity, are mutually committed to a common endeavor and bond in strong personal relationships. Group psychology (for example, "team unity") is often the topic at team meetings, whether the activity is considered an individual or team sport. The athlete is inextricably linked to a team identity. Individuality generally yields to a certain selflessness, since loyalty, cooperation, reliability, and adaptability are greatly prized qualities. Participation in associated social functions also contributes to a shared mentality and team spirit. Under ideal conditions, the consciousness of

an organizational culture emerges, distinguished by the values of industriousness, teamwork, discipline, resourcefulness, and integrity.

Heightened learning experiences are engaged together during intense daily practice sessions, characterized by organizational precision and state-of-the-art didactic techniques. High expectations of performance are coupled with regular assessment and feedback, creating the conditions said to be necessary for excellence in any learning environment (Study Group on the Conditions of Excellence in American Higher Education, 1984). Post-game evaluations thoroughly analyze either victory or defeat as learning experiences, after dramatic and exhilarating challenges are played out in highly competitive interscholastic events.

Pros and Cons

A persistent sports folklore asserts that this athletic experience provides durable and authentic insights into life, which are apprehended emotionally as well as intellectually. Competitive team sports are said to generate growth in character, maturity, self-respect and pride, respect for others, responsibility, and honesty (Chu, Segrave & Becker, 1985, p. 65). Further, athletics are supposed to provide individuals with experiences of discipline, self-restraint, concentration, cooperation, and sacrifice (Boyd, 1980). It is thus rationalized that sports teach lessons that are not only an integral part of a liberal education but also important for success in life. Although these by-products are cited as a justification for college sports, it should be noted that they are not likely to be a part of the conscious purpose of most college student-athletes. From the participant point of view the most commonly influential incentives for

involvement are probably physical activity, enjoyment, approval, and rewards (Savage, McGovern & Bentley, 1931).

Coaches, administrators, and other educators tout the hypothetical personal benefits of athletic participation, claiming transferability for the skills gained to other life situations. College students seem to share these sentiments regarding their athletic peers. About half of one student population surveyed expressed the belief that athletic participation enhances student development (Maltross, 1980). According to developmental theorists, athletics are capable of creating a developmental milieu beneficial to all who participate in them (Sanford, Borgstrom, & Lozoff, 1973). However, the transfer of skills and values may not occur automatically. Students must be helped to generalize concepts and apply them (Layman, 1960). But, all conjecture aside, the persistent question remains: What actually does happen to athletes in real college-life situations?

Some believe that athletes are exploited and then discarded "virtually unscathed" by the educational experience (Coakley, 1978; Edwards, 1983, 1984; McCurdy, 1983; Meggysey, 1971; Nelson, 1983; Nyquist, 1982; Zingg, 1982), although it appears that failure to achieve academically does not necessarily ruin their lives (Boone & Walker, 1987). A misuse of athletes may result from an over-emphasis on winning seen in corporate athleticism, where institutions of higher learning are strongly influenced by the business ethic emanating from "big-time" college sports (i.e., NCAA Division I revenue-producing programs). Big-time athletics, then, have to be brought in line with the culture of higher education, rather than succumbing to media and show business subcultures (Cady, 1978). Controlling the deleterious effects of professionalization and

commercialization in amateur sports has been a major problem facing higher education since the 1920's (Atwell, 1983; Hanford, 1979; Savage, 1929; Underwood, 1983).

Significance of this Study

The student-athlete is thus exposed to a college environment very different from that experienced by the non-athlete. Exactly what kind of impact does this specific environment have on psychosocial outcomes? Are the effects of athletic participation debilitating or beneficial for students? Does athletic involvement hinder or interfere with conventional college impact? Does athletic involvement detract from the overall educational experience, as some say? Or are additional educational benefits derived from athletic participation, which is legitimately part of the extracurriculum? A wide disparity of opinions necessitates an in-depth analysis of the problem. This study has defined issues, tested theory, and explored possible answers to these pressing questions as they apply to the personal and social development of athletes attending four-year colleges and universities. It is hoped that the new empirical evidence from this study will help to resolve some of the issues that are being hotly debated in this confusing body of literature.

Chapter 2

A Review of the Literature

The questions raised about college athletics are often confusing and controversial, since many issues have not yet been studied empirically. What does the research show? Results are mixed. Various studies with similar research designs have reported divergent and contrary findings on a wide variety of outcome measures.

A recent review of the literature pertaining to academic, personal, and vocational development has provided no conclusive empirical evidence about the effects of participation in intercollegiate athletics (Brown, 1987; Stone & Strange, 1989). The research is inconsistent, confusing, and contradictory (Stevenson, 1975). Neither proponents nor critics of athletics can offer substantial evidence to prove that athletics per se are either beneficial or harmful in specific areas (Kniker, 1974; McLaughlin, 1986). In addition, there is reason to believe that outcomes may vary by sport (Bredemeier & Shields, 1986).

At its best, college athletics can be a vital, integral part of the educational process, enhancing human relations and communications skills as well as personal development through experiential, collaborative learning experiences. At its worst, it can be corrupt, demeaning, damaging, and disabling for individual participants. The significant question then arises: What effects really do occur today in intercollegiate athletics? What are the facts?

Cognitive Development

In most instances the academic outcomes for athletes have been found to be very similar to (or even better than) those for non-athletes (American College Testing Program, 1984; Ballantine, 1981; Farrell, 1984; Purdy, 1982; Stuart, 1985). Several major studies have actually found that participation in intercollegiate athletics has a positive influence on educational aspirations, attainment and retention (Astin, 1985; Ballantine, 1981; Shapiro, 1984). Further, research shows athletes typically achieve better academically during their competitive seasons, when they are forced to manage their time better (Lopiano, 1988).

Research to date has demonstrated no important differences between athletes and non-athletes in developing purpose and lifestyle plans, but that athletes (n=48) scored "significantly lower" in educational and career plans than a similar group of non-athletes (Sowa & Gressard, 1983). These results are difficult to generalize, since they involve a single slice of time at a single institution and do not differentiate type of sport or competitive level.

In a study comparing athletes (n=350) and non-athletes (n=218) at two NCAA Division I and two Division NCAA III schools, participation in athletics was deemed "possibly detrimental" to educational and career plans, although only for freshman and sophomore male athletes. No major differences were found between athletes and non-athletes who were upperclassmen (i.e., juniors or seniors). In addition, 28% of male Division I athletes indicated that they planned to play professional sports (Blann, 1985). These results demonstrate highly unrealistic career plans. The institutional sample size in this study is small (n=4). Although various types of individual and team sports were

sampled, the study did not distinguish between revenue and non-revenue sports in the analysis.

The results reported above question the ability of athletes to formulate mature career plans. The low "career maturity" levels recorded seem to engender unrealistic career goals for some athletes. In another single-institution study of career attitude maturity involving football and basketball scholarship athletes (n=122), 48% of the athletes questioned expected a career in professional sports, with no differences between white and Black athletes (Kennedy & Dimick, 1987). Again, in another single-institution analysis of Division I football and basketball players (n=97), an astounding 62% expected a career as a professional athlete (Paul, 1986). Fully 77% of Black athletes and 43% of white athletes in the latter study expected to turn professional.

These results contrast sharply with the generally accepted figure of 2% who actually do enter professional sports (Kennedy & Dimick, 1987), indicating that athletes may be unrealistic in evaluating the probability of having a professional sports career. However, caution should be exercised in interpreting these findings. The results may be site-specific, due to limited samples of both institutions and athletes. Whether or not these findings are corroborated, vocational counseling should ideally begin early in the athlete's college experience (Phelps, 1982). Some schools have initiated career planning programs to combat such potentially faulty perceptions of reality, develop awareness of career options and explore alternatives (McCurdy, 1983; Naylor, 1983).

The negative findings on educational plans contradict results of other multi-campus, longitudinal studies which have found that athletic involvement

has an especially pronounced, positive effect on persistence or retention (Astin, 1984, 1985) and on motivation to earn a bachelor's degree (Ryan, 1989). It is also contrary to the sports folklore theory that attributes psychological growth to planning, setting goals and priorities, team orientation, and competition in the athletic arena. These experiences are thought to ultimately translate into high aspirations in other areas of life. Possibly, the discrepancies in results are the result of differing sampling procedures: The negative findings are often found in Division I universities, while the positive findings tend to come from undifferentiated national samples.

Affective Development

A strong commitment to the role of athlete sometimes creates problems in time management, peer relationships, lack of career and social development opportunities and restricted self-concept (Chartrand & Lent, 1987). Excessive emotional strain may also result. On the other hand, the stress and strain of the athletic environment may prove beneficial to affective developmental outcomes by molding character, enhancing self-esteem, honing personal values, and promoting social skills.

Psychological Outcomes

However, potential developmental concerns have been identified by psychological theorists. There is some thought that an overidentification with college athletics might suspend maturational processes, leading to a premature "identity foreclosure" wherein conformity to an established, dominant team ideology may replace one's own individual identity struggle (Nelson, 1983;

Petitpas & Champagne, 1988). If athletes fail to work hard outside the realm of sports because they are overprivileged and overprotected, their personal growth may be stilted, precluding the development of adequate life skills. The rigidity of a regulated life may thus frustrate the formation and exploration of a unique personal identity.

Student athletes may also differ from their non-athletic peers in forming certain values and attitudes. Research has shown athletic participation to be associated with smaller than average decreases in business interests, using a national sample (Astin, 1984). This may be due to isolation from peer group effects usually accompanying college attendance, signifying a reduced impact of liberal education values. For Division I athletes it may also be related in a positive way to the extent of their exposure to an elite corporate lifestyle through wealthy alumni and boosters. Venturing into the realm of prosperity may encourage a more materialistic orientation.

Further research has also shown athletic participation to be associated with student satisfaction in several areas, including the institution's academic reputation, administration, and intellectual environment (Astin, 1984) and general life satisfaction (Varca, Shaffer & Sanders, 1984). Athletic involvement is also related to high levels of satisfaction with the overall college experience (Ryan, 1989). Athletes typically spend more time at school than do their peers, many of whom either live or work off-campus. Athletes also have their personal identities and egos linked more to the school and have more direct interaction with support services and administrators. The unique experiences encountered in the athletic environment may account for a greater sense of satisfaction with the overall college experience reported by student-athletes.

The stressful demands of competition and a rigorous schedule may cause athletes to experience more emotional problems than non-athletes (Daniels, 1984). Research has shown that in some cases college varsity athletes suffer from psychological depression to a greater extent than do their non-athletic peers (Thirer, Zackheim & Summers, 1987). The very nature of athletics may provide more chances to fail than to succeed, thus leading to depression. These findings, however, are restricted to a small sample of athletes (n=43) from non-revenue sports in a single institution.

Other psychologists fear that athletes may develop an excessive emotional dependence on athletic activities, which would theoretically generate severe emotional consequences in the event of unexpected or threatened termination (Petitpas & Champagne, 1988). This idea conflicts with the theory that athletics have a favorable impact upon the overall wellness or emotional health of college students. "Wellness" involves a broad spectrum of interwoven dimensions: physical, emotional, spiritual, occupational, social, and intellectual (Archer, Probert & Gage, 1987), some or all of which may be influenced by athletic participation. The athlete's unique experiences challenge boundaries and potential in many assorted aspects of the college experience, but the actual results of these experiences have yet to be clearly established. Athletics may have the ability either to spur self-actualization toward optimal health or to hinder the development of the whole person. These conflicting notions can be sorted out only through empirical research.

Social Development

Increased interpersonal self-esteem has been touted as one of the major effects of college attendance (Astin, 1977). Social adjustment is often

articulated as a direct effect of sport participation, derived from coping with the ups and downs of a competitive environment (Layman, 1960; McKristal, 1965). The social lessons of sport theoretically include aggressiveness, cooperation, and the ability to endure hardship and recover (Spears, 1982). Participation in the special group consciousness of athletic team membership may constitute a unique opportunity for close interpersonal connections.

The research findings of a single-institution study have indicated no significant differences between athletes (n=48) and non-athletes in developing autonomy, mature interpersonal relationships, and interdependence, while suggesting a possible negative difference for athletes in mature relationships with peers (Sowa & Gressard, 1983). However, satisfaction with student friendships has been related to athletic participation in nationally-based survey research (Astin, 1984). The negative results pertaining to peer relationships may be due to a bias in the definition of the criterion variable, as discussed below.

The Student Developmental Task Inventory (SDTI, 1979) defines a mature relationship with peers as a shift towards greater independence and individuality. These traits are generally uncharacteristic of peer relationships in a team-sport environment, and may not actually be a valid sign of developmental immaturity. It may be that the SDTI produces low scores for athletes on independence and individuality because they have been taught to yield to group values in a team setting. Ironically other research has found that, compared to their peers, athletes display a high degree of independence (Astin, 1968). Athletes may learn (by doing) how to effectively balance individual and group roles, distinguishing appropriate times for each. By living in the athletic

environment, they discover when to assert autonomy, resisting conformity and manipulation, and when to submit individual desires to corporate purposes.

Teamwork is a basic social skill, useful in all walks of life, which should, according to some critics, be explicitly valued in the college curriculum (Astin, 1987). Sports folklore maintains that the influence of the athletic environment successfully develops interpersonal skills through experiences in cooperative task group processes, exposure to media contacts, and interactions with fans, alumni, and administrators. In this theory team-oriented structures provide exceptional opportunities for peer interaction and leadership roles (Stone & Strange, 1989). Athletic participation may therefore develop interpersonal skills and leadership abilities in students who participate, through the various learning experiences that are included in the athletic environment (Hogan, 1978; Ryan, 1989).

Sports theory generally includes and places a high value on both competition and cooperation. These are not opposing and mutually exclusive concepts, but exist side by side. It is not an either-or proposition. The two work together complementarily, when appropriately balanced. In athletic competition opponents can be seen as cooperating with one another when they play their best. The "good sportsman" plays to win and gives his/her best to every contest, accepting victory modestly and defeat graciously (Savage, McGovern & Bentley, 1931). Sportsmanship, then, is a social quality implying fairness, adherence to rules, and respect for individual differences (Bucher & Dupee, 1965).

Athletics have demonstrated the usefulness of both cooperation and individualism in their appropriate places (Handlin & Handlin, 1970; Spears,

1982). Competition and cooperation are both considered necessary building blocks in the Pyramid of Success (Wooden, 1972), which is applied not only to sports but to life in general. Success, according to Wooden is "peace of mind which is a direct result of self-satisfaction in knowing you did your best to become the best that you are capable of becoming." Everyone can "win" with this definition, where the individual competes against his or her own potential. Striving for excellence, thus, is not necessarily a zero-sum competition, where one person's success occurs at the expense of another person.

The task of properly balancing one's personal achievement with consideration for others is a universal social concern. Everyone must learn to manage this dilemma. Team sports theoretically provide an experiential opportunity for the individual to personally negotiate this problem. The appropriate times for collaboration and competition are discovered and refined on a daily basis through participation in team activities. Interdependence, assertiveness, initiative, communication skills, and conflict mediation are all highly valued in the athletic culture. Useful humanistic principles can be learned and practiced in an environment where team-building, trusting relationships, consideration for others and leadership opportunities are valued as key elements to organizational success (Culbert & McDonough, 1985).

Some complain that college sports over-emphasize winning. In some cases, that may well be true. However, both articulated theory and research findings demonstrate healthy attitudes towards competition. For example, in a single-institution study both male and female athletes surveyed were found to value playing well more than winning (Blair, 1985). In athletic theory success is generally defined as doing your best, not as beating someone else (Wooden,

1972). The positive effects of challenge are trumpeted as enhancing mastery, self-definition, and satisfaction (Brim, 1988). However the ethics of sportsmanship and fair play, as contextual values for such experiences, are theorized to lend a balanced perspective to competitive situations.

Winning and losing are experiences to be repeated throughout life. Some (Kohn, 1986) advocate seeking an environment that does not require winners and losers. This view is seen as unrealistic by others because it denies the potentially valuable lessons learned from handling the ups and downs of life. Managing the "slings and arrows of outrageous fortune" is said to build character, stimulate ingenuity, and spawn resourcefulness. Self-confidence is bolstered in weathering storms and in dealing with Kipling's "two impostors," success and failure. In theory, athletics provide a stage which simulates real-life situations.

Another social theory associated with athletics concerns race relations. Does interracial sporting competition promote positive beliefs and behaviors of athletes toward members of other races? Some say that it generates an acceptance and appreciation for cultural diversity. The basis for this belief is the "contact theory of racial integration" which attributes a positive influence to multi-ethnic team experiences. Personal cooperative striving is thought to engender positive attitudes among people of different races. In one study, playing with members of another race was positively correlated with positive racial attitudes and behavior (Slavin & Madden, 1979). However the literature in general does not seem to support this notion. Playing or working together in a sport setting does not invariably lead to improved race relations; and increased

contact is not always correlated with positive race relations (Chu & Griffey, 1985). These issues need to be explored further.

Student Involvement Theory

Students learn best by becoming deeply and personally immersed in educational tasks and activities. The construct of student involvement (Astin, 1984, 1985) is defined as the amount of physical and psychological energy the student devotes to the academic experience. The student's involvement in college is primarily defined behaviorally, as a direct manifestation of an individual's interior motivation and values. According to Astin, the greater the student's involvement in college, the greater the learning and personal development. The amount of personal talent development associated with any educational program is therefore directly proportional to the quality and quantity of student involvement in that program.

This theory can be broadly applied to include intercollegiate athletics as a sub-environment of the academic experience, since it is at least theoretically considered to be part of the co-curriculum. Intercollegiate athletic participation, then, is one form of student involvement in campus life. Since athletics demands a high level of active student involvement, student-athletes should exhibit additional pyschosocial development in areas related to athletic participation.

Certainly student-athletes invest tremendous effort, time, and energy in their athletic participation and attach great personal importance to their sporting activities. But what are the outcomes elicited by this extraordinary commitment? Astin's theory suggests that additional learning and personal

development will occur where the student is actively, personally involved in a part of the academic experience. Can this be applied to student-athletes? Is athletics really an integral part of the college educational experience?

This study has applied the student involvement theory to college athletics, testing its applicability to co-curricular collegiate activities. Athletics may constitute an exemplary holistic learning experience, incorporating the psychomotor, cognitive, and affective domains of educational objectives (Bloom, 1956) in one activity. Because many aspects of student development are believed to occur in tandem (Chickering, 1976), an educational program (like athletics) which addresses the whole person may be particularly effective. When properly conducted, competitive sports may strike the appropriate balance between physical and mental exertion, analagous to the ancient Greek ideal of arete, "a sound mind in a sound body" (today translated into the concept of wellness). These propositions and their implications are critically explored in the course of this study.

Summary and Conclusions

Vigorous debates have resulted from various contradictory research findings with multiple rival interpretations, demonstrating a clear need for carefully designed research on the impact of athletic participation on college students. Multivariate analyses of a large sample of longitudinal data are needed to make valid inferences about the effects of athletic participation on specified outcomes. Data collected at a single slice of time is inadequate for assessing the impact of an educational environment. Individual progress cannot be measured and environmental impact cannot be assessed without first having a starting

point, and then gathering subsequent longitudinal data at a later point in time. Analytic methodology which controls for a variety of potentially biasing antecedent variables is also essential, in order to assess the independent contribution of athletic participation in predicting selected outcomes.

Even though there is a great deal of conflicting conjecture and opposing theory about college sports, and even though a pressing need for further inquiry into affective outcomes for college student-athletes has been established (Astin, 1984; Blann, 1985; Petitpas & Champagne, 1988; Sowa & Gressard, 1983), surprisingly little empirical research has been undertaken in this area. The major contribution of this research project is to provide generalizable national data about the effects of athletic participation on college student psychosocial development, while simultaneously distinguishing major sub-categories of athletic participation. Using a longitudinal, multi-campus design, several gaps in the literature have been filled. The effects of scholarship status, competitive level and type of sport have been differentiated for the first time in a single study with a large national sample.

Chapter 3
Methodology

This investigation has examined the role of athletic participation in contributing to college student psychosocial development. While cognitive progress, as measured by retention and academic success, was assessed, the primary focus was on affective outcomes, as measured by self-reported values, beliefs, experiences, and traits. Detailed definitions of these dependent variables are provided later in this chapter. The strength of this study is its longitudinal design, with pretest and posttest information on the same individuals.

Three rival paradigms were tested concurrently, as the effects of participation in intercollegiate sports were alternatively hypothesized to be positive, negative, or neutral. However, the involvement model, which attributes beneficial developmental outcomes to athletic participation, has served as the reference point and theoretical baseline. Athletic involvement in this model is viewed as a valuable and worthwhile part of the educational process. Testing and massaging this somewhat counterintuitive "benefit theory" was the primary focus of inquiry.

Hypotheses

The purpose of this study was to test simultaneously a number of rival theories about the effects of athletic participation on American college undergraduates attending four-year institutions. Much of the mythology and folklore about college athletics has never been subjected to rigorous testing.

Some of it is contradictory. The alleged effects of athletic participation on students remain an unsubstantiated part of popular and sometimes conflicting belief systems.

Given the lack of systematic theory in this field and the paucity of empirical knowledge, the term "theory" may not really apply to these competing beliefs. In any case, there seem to be three major points of view: the good, the bad, and the indifferent. Athletics seem to be viewed either as an unqualified blessing, an unmitigated disaster, or an insignificant matter. This research project was explicitly designed to test the claims of these rival positions using the following eight hypotheses. This investigator has chosen to state each hypothesis according to his best understanding of what existing research and the most plausible theories would lead us to expect, and each formal hypothesis is accompanied by a "rationale." However, in those cases where competing popular beliefs lead to conflicting expectations, a "counter-rationale" is also presented:

1. Athletic participation will affect the psychosocial development of student participants; important differences will be observed when comparing athletes and non-athletes.

Rationale: The effects will be positive and can be attributed to the high levels of student involvement engendered by the athletic environment, as well as additional learning experiences encountered there.

Counter-rationale: The differences will be negative due to an overemphasis on sports-related activities and a concomitant lack of commitment to the role of student.

2. As a result of high levels of student involvement and added educational experiences, athletic involvement will result in positive educational outcomes for student-athletes in personal and psychosocial development. Specifically, athletes will demonstrate

a) improved interpersonal and collaborative skills; and

b) gains in leadership abilities.

Rationale: The daily experience of collaboration required by team membership promotes upgraded human relations skills.

Athletes will also display

c) greater drive to achieve; and

d) greater competitiveness.

Rationale: In the dominant sports culture athletes are regularly conditioned to set goals and vigorously strive to reach them. These attitudes and skills can easily be transferred to other aspects of life.

Athletes, compared to non-athletes, will also

e) report a higher degree of satisfaction with the overall college experience; and

f) demonstrate higher retention rates.

Rationale: Athletic involvement generates a strong sense of identification and connectedness between student-athletes, their peers, and the institutions they represent. High levels of student involvement produce high levels of satisfaction and cause the student to remain in school.

g) Athletes will also show higher-than-expected levels of "career maturity" by realistically assessing their personal likelihood of having a career in professional sports.

Rationale: Coaches, counselors, and administrators constantly remind athletes about the scarcity of available jobs in professional sports, compared to the large numbers of people who aspire to such careers.
Counter-rationale: Coaches use the lure and attraction of professional sports as a carrot to motivate athletes to work hard in their sport. Thus they encourage an unrealistic focus on professional sports careers to the exclusion of other options.

3. Some of the beneficial noncognitive outcomes associated with athletic participation may be hindered or even reversed for "big-time" college athletes who:

a) receive an athletic scholarship;

b) compete at an NCAA Division I institution; and

c) participate in one of the "revenue sports" (that is, either football or basketball).

Rationale A: The time-consuming and all-encompassing demands of big-time college sports may not allow sufficient opportunities for personal growth and self-exploration outside of athletic activities, thus interfering with conventional patterns of college student development.
Rationale B: In big-time college athletics educational goals are sacrificed at the expense of corporate athletic values. Athletic involvement is professionalized and commercialized; it is reduced to a win-at-all-costs mentality, counter to the ideals of student development.
Counter-rationale: The labyrinthian network of advising and support services available to athletes in big-time programs will assist these students in successfully negotiating the college environment, thus

enabling them to progress at least as well as the typical non-athlete (and possibly to a greater extent).

4. Big-time college sports may cause Division I revenue-sport, scholarship athletes to experience emotional distress more often than other college students. They may more frequently feel:

a) depressed;

b) overwhelmed by all they have to do; and

c) lonely or homesick.

Rationale: The enormous pressures and frustrations of big-time college sports involvement may take their toll on the emotional health of student-athletes whose time and energy is severely over-committed.

Counter-rationale: The arsenal of guidance and support services available to athletes in big-time college athletic programs will successfully nuture these students and prevent them from being overwhelmed by the demands of dual roles.

5. The pressures of big-time college sports may produce problems with academic honesty, as measured in the frequency of self-reported student cheating on quizzes or examinations.

Rationale: Big-time athletes may be academically underprepared, may not have enough time to keep up with their studies, and may suffer from physical exhaustion and sleep deprivation during their season of sport. They may resort pragmatically to cheating as the solution to a vexing dilemma, an "easy way out" of a tough situation.

Counter-rationale: Academic support services will assist athletes in preparing properly for classes, thus reducing the likelihood of cheating

behaviors, which are carried out in desperation by those who are unprepared. Well-planned course loads, regular study hall, and the availability of tutoring will combine to insure adequate preparation.

6. Due to the proportional overrepresentation of Black athletes participating at higher levels of competition, athletes of all races in division I revenue sports will show progress toward the liberal education ideal of appreciating diversity by:

a) placing a higher value on the importance of promoting racial understanding; and/or

b) showing greater tolerance of people with different beliefs.

Rationale: The contact theory of racial integration applied to sports contends that participating on a multi-ethnic athletic team may improve the beliefs and attitudes of team members toward members of other races through cooperative striving toward a common goal.

Counter-rationale: Previously held attitudes and patterns of behavior are highly resistant to change. Merely playing on a team with members of another race is not likely to substantially influence interracial attitudes in any direction. The high level of competition may actually serve to exacerbate racial tensions and animosity.

7. Division I athletes in revenue sports may demonstrate more materialistic values than other college students, reflected in the relative importance attached to being "very well off financially."

Rationale A: Athletics tends to isolate student participants from some of the usual college peer effects. The tendency toward decreased business interests may be mitigated by this insulation. In addition, big-time

college athletics functions in a highly materialistic environment characterized by generous scholarships and "perks," wealthy "boosters," television revenues, and the promise of highly-paid professional careers.

Rationale B: The athletic environment emphasizes achievement, which can be seen tangibly in monetary wealth. Athletes may value the goal of material achievement as the reward of hard work in the business world.

Rationale C: Due to their greater exposure to wealth and power in the athletic environment of big-time college sports, athletes may personally focus more on material, real-world goals than other students who are not so directly and continuously exposed to the rich and powerful as part of their college experience.

Counter-rationale: Collaboration, social concern, and altruism are part of an athletic value system in which non-material accomplishments, integrity, and self-respect are esteemed as high ideals.

8. The athletic environment in general promotes both competitiveness and cooperation in student-athletes.

Rationale: Athletes experience competition in the collaborative context of team membership, which values both competition and cooperation as necessary ingredients for success.

Counter-rationale: Competition is highly valued in competitive sports; winning always occurs at the expense of another person. Therefore cooperation is not highly promoted in college athletics.

Sample

In order to make valid generalizations about these important issues, a large multi-institutional sample with comprehensive longitudinal data was preferred (Astin, 1977). That is why CIRP data were selected for this study. The Cooperative Institutional Research Program (CIRP) is a continuing longitudinal study of the American higher educational system sponsored by the American Council on Education and the Graduate School of Education at UCLA, focusing on how students are affected by their institutions.

A nationally representative sample (n=182,370) of the college freshman population was surveyed in Fall 1984 by CIRP, utilizing participant institutions to administer Student Information Form (SIF) questionnaires randomly to their entering classes. The stratified random sample of institutions used here (n=294) includes only four-year colleges and universities. Participants came from public and private, large and small, selective and non-selective institutions across the United States.

The SIF includes data regarding student backgrounds, values, goals, and attitudes at the time of entry to college. Only first-time, full-time freshman students are included in this normative sample, which is weighted to correct for non-respondent bias, thus approximating the results which would have been obtained if all had responded (Astin, Green, Korn & Maier, 1984). The data were compiled, summarized, reported and stored in computer files. Subsequently registrar's data were merged with the SIF information, adding test scores, retention information, and institutional statistics to individual files.

A Follow-Up Survey (FUS) was then mailed out four years later (in the Summer of 1988) to a random sample of students who had filled out freshman

questionnaires (n=24,254). The response rate to the 1988 FUS was about 26% (n=6,382). A sub-sample of non-athletes (n=757) was culled from this 1988 FUS sample to make comparisons with a special sample of athletes, described below.

In addition to the regular 1988 FUS a special stratified random sample was pulled from the original SIF respondents to be surveyed for this project (n=3,986). Excluded were students from two-year colleges. Athletes from NCAA Division I institutions were oversampled, using the 1988 National Collegiate Athletic Association (NCAA) Manual to identify the competitive level of participant institutions.

The special sample was selected from those 1984 respondents who indicated that they were "very likely" to play varsity intercollegiate athletics (n=22,552), since in the previous cohort (1983-87) 74% of those responding this way as freshmen actually did participate in intercollegiate sports. Thus with a likely 25% total response rate after mailing two waves (n=1,000), a sample of approximately 740 athletes would be obtained. The results were actually quite close to expectations, a little better than predicted (n=780). Thirty-two percent of these were from Division I schools.

The regular FUS data sample (n=757) was then aligned with the sample of FUS athletes (n=780), the registrar's data, and the original SIF responses onto a merged computer file. The 1988 responses were matched with 1984 responses and registrar's data for each individual. The combined longitudinal file (n=1,538) constituted the data set for this project.

Instruments

The longitudinal design used by CIRP provides both pretest and posttest information, which allows for assessment of changes in the criterion variable along a developmental continuum. The data in this study were drawn from the 1988 Follow-Up Surveys of the 1984 freshman cohort, as described above. (See Appendix B for copies of these instruments.)

The target population and mediating variable "athletic participation" was identified in the regular FUS survey by a question asking whether or not the student had participated in intercollegiate athletics. Consistent with recent findings related to college student participation in sports (Astin, Green, & Korn, 1987), 28% of the FUS respondents (n=1,787) indicated that they participated in intercollegiate athletics.

The special FUS survey of athletes contained supplemental questions about attitudes and personal observations pertaining to the athletic environment. Items regarding scholarship status, level of competition, and whether the person played a "revenue sport" (i.e., either football or basketball) were included to elaborate and detail relevant individual circumstances and sub-environments which might impact the analysis.

Research Design

The key empirical question being addressed was whether or not athletic participation (or any subset of that environmental experience) adds to the prediction of selected cognitive and affective outcomes, after controlling for the other potentially biasing independent variables. Experimental subsets include

scholarship athletes, those who compete in NCAA Division I, and those who play in a revenue sport (either football or basketball).

An input-environment-output model (Astin, 1970) was employed in assessing the impact of the athletic environment (and sub-environments) on college students. The interrelationships between the three components were systematically examined to determine where causal connections would most likely exist.

Outcomes are the end results of interest. These criterion variables are performance measures which reflect student status at the posttest side of the model, after the student has been exposed to the college environment for a period of time. The psychosocial outcomes targeted in this study involve cognitive outcomes (college grade point average and retention) as well as indices of affective development (such as interpersonal skills, leadership abilities, personal satisfaction, and emotional health) which are measured in the 1988 Follow-Up Survey of the 1984 freshman cohort. The 1988 outcomes were compared to college entry data collected in 1984 and various environmental factors. Changes over time were thus assessed to determine if there were residual relationships between institutional environments (sports participation) and specified outcomes, after taking inputs into account.

Inputs are comprised of all the background traits and personal characteristics the freshman student brings to college as "baggage." Pretests on all attitudes, values, and expectations recorded at the point of entry are also included as inputs. These items alone are expected to contribute a substantial amount to the prediction of many outputs on the posttest side.

However there are intervening events between input and output data points, which influence progress towards various outcomes. In addition to athletic participation, these "environmental" agents consist of distinctive institutional characteristics, specific educational programs, and pivotal interactions with faculty, staff, and peers. Valid connections between these collegiate experiences and student outcomes, however, can only be established when input effects are first taken into account.

Stepwise multiple regression analysis was used to find the best set of predictors for each dependent variable. As an inferential tool of analysis stepwise regression allows the researcher simultaneously to analyze the relative effects of several independent variables upon a dependent variable. The differential impact of various college environments on student development can thus be sorted out. The resulting beta weights (standardized regression coefficients) allow one to compare the relative predictive power of independent variables for each criterion.

"Blocking" is a procedure which specifies the order of entry of independent variables into a stepwise regression equation. A protocol is established with sets or blocks of variables arranged in a logically enumerated sequence. The rationale for blocking the entry of independent variables (inputs and environments) for stepwise multiple regression analysis stems from the attempt to identify direct linkages between environmental and outcome variables. A continuous re-examination of variable relationships occurs at each step of the analysis, providing information on the relationships between independent variables, as well as between independent variables and the dependent variable.

The basic approach in blocked stepwise regression is to enter variables within a block one at a time until no remaining variable within that block is able to produce a significant reduction in the residual sum of squares, at which point the variables in the next block are entered in the same fashion.

Seven blocks were sequentially arranged to reflect the input-environment-output model. Since pretest responses for the dependent variables (data from the 1984 SIF) were likely to have the strongest influence on posttest results, they were controlled first. The logic for subsequent order of entry was based simply on temporal sequence, controlling first for the influence of variables which occur earliest in time, so their effects will already be accounted for when a later variable is considered for entry into the equation. Demographics and pre-college traits comprised the second block; institutional characteristics were entered thirdly; followed by experiences in the college environment in the fourth block.

The environmental variables reflecting athletic participation and its sub-categories were entered in the fifth block. These included sport, scholarship status, competitive level, and whether the athlete played a revenue sport. The sixth block was comprised of interaction terms, which are combinations of variables thought to be particularly important. Included here were the variables "Black athlete" (combining race with athletic participation) and "big-time athlete" (a Division I, scholarship athlete who plays a revenue sport). Finally, a seventh block was used for "intermediate outcomes" (e.g., satisfaction with one's opportunities to talk to professors), which may be related to particular dependent variables.

The logic behind any interaction term is that the effect of any given independent variable may depend upon the value of another independent variable. For example, the interaction term "black athlete" explores the possibility that the effects of athletic participation may be different for black than for non-black students. Since the independent simple effects of being black and of participating in athletics will be controlled earlier (in blocks two and five, respectively), we will be able to see if the combination of race with athletic participation adds anything to the prediction of the dependent variable.

The "big-time athlete" interaction term is designed to reflect the stereotypical college athlete who preoccupies the media by combining the fact of having a scholarship with participation in a "revenue" sport at a Division I institution.

One of the great advantages of SPSS regression is that after each step it computes a "beta in" for each variable not yet in the equation. These coefficients represent the Beta weight that each variable would get if it were to be entered as the next step. By following the changes in these betas from step to step, it is possible to determine if the correlations of any variables with the dependent variable are "mediated" by other variables.

This model produces the most stringent test of the possible effects of athletic participation. It is a robust test of the association of participation in intercollegiate sports with the specified affective outcome variables, in part because it controls for a large number of "rival" input and environmental variables. Sub-sets of the athletic environment were also examined, to determine if scholarship status, sport, and level of competition influence outcomes. A finding that sports participation has additional predictive power

above and beyond the contribution of all the other independent variables would constitute persuasive evidence for the impact of student participation in college sports on affective outcomes. Blocking the sports variables last in order of entry also provides a "lower bounds" estimate of the unique amount of variation in a given dependent variable accounted for by athletic participation. Accidental correlation and shared variance are attributed to the variables entered first in the equation in this strict test for the unique contribution of athletic involvement.

Variables

Developmental changes occuring in this cohort of college students from their initial matriculation in 1984 to a point in time four years later were assessed using the following 20 psychosocial outcomes.

Self-ratings ("compared with the average person your age") on three personal traits including drive to achieve, competitiveness, emotional health, and leadership ability, each scored as 1=lowest 10%; 2=below average; 3=average; 4=above average; or 5=highest 10%; the importance of "life goals" such as being very well off financially (materialism) and of helping to promote racial understanding, scored as 1=not important; 2=somewhat important; 3=very important; or 4=essential. The last two items were included in both the pretest and follow-up surveys.

Also included among the affective outcomes were items measuring academic dishonesty (cheating), loneliness, depression, and feeling overwhelmed, all scored as 1=not at all; 2=occasionally; or 3=frequently; developmental self-ratings on interpersonal skills, leadership abilities, and

tolerance of persons with different beliefs, all scored (in comparison to 1984) as 1=much weaker; 2=weaker; 3=no change; 4=stronger; or 5=much stronger; satisfaction with the overall college experience and satisfaction with career counseling and advising, each scored as 1=can't rate; 2=dissatisfied; 3=neutral; 4=satisfied; or 5=very satisfied (all "can't rates" were excluded).

Degree aspirations were measured on a scale of 1=none; 2=vocational; 3=associate degree; 4=bachelor's degree; 5=master's degree; 6=doctorate or professional degree. (Responses of "other" were coded 3.) Students were asked to indicate whether or not they had received career or vocational counseling, whether they had graduated with their bachelor's degree in four years, and whether they were still enrolled in college full-time: these were scored 1=no; 2=yes. Finally, the 1988 Follow-Up Survey asked for college grade point average: 1=C- or below; 2=C; 3=B-,C+; 4=B; 5=A-,B+; 6=A. Registrar's data on retention and undergraduate grade point average were used to check self-reports on the GPA and retention measures.

In addition to these 20 dependent variables taken from the regular 1988 FUS, supplemental questions were asked of the targeted athletic population to explore the effects of athletic participation on cooperation and competition. Athletes were asked to agree or disagree with two statements: 1) My athletic experiences have not improved my ability to cooperate with others; and 2) competition is good because it makes me strive for excellence. To look at the athletes' desires and perceptions about the probability of a career in professional sports, they were asked to agree or disagree with two statements: 1) I have a very strong desire to play professional sports; and 2) I have a very good chance actually to have a career as a professional athlete. To see whether athletes feel

exploited, athletes were asked to agree or disagree with the following statement: 1) As an athlete, I feel "used" by my school and coach. These supplemental items were all scored as 1=disagree strongly; 2=disagree somewhat; 3=agree somewhat; or 4=agree strongly.

Over fifty independent variables were used to control for the influence of pretest responses, student characteristics, institutional characteristics, and in-college experiences. Freshman pretests were available for self-ratings and life goals, in addition to freshmen's self-estimates of their chances of being satisfied with college, completing a degree, or dropping out. Demographic variables included sex, race, religious preference, high school grades, and parental education. Institutions were stratified according to type, control, race, selectivity, and sex. College environmental factors included major field of study, employment, campus organizations and activities, and athletic participation.

Nine athletic variables were analyzed, including general intercollegiate athletic participation, scholarship status, competitive level, and whether or not the athlete participated in a revenue sport. Individual sports included football, basketball, and swimming/water polo. A special look at black athletes and "big-time" athletes was included to round out the athletic sub-environmental identifiers.

Chapter 4

Results and Discussion

Stepwise multiple regression analyses were performed separately for each of the major dependent variables. This chapter presents the results of the statistical analysis arranged topically to show how similar variables fared relative to each other. The broad areas include emotional experiences and feelings, values and goals, social development, academic outcomes, and career maturity. Unless otherwise specified, the betas are reported at that stage in the regression when all the input and college type variables have been controlled.

Emotionality

The first grouping consists of affective outcomes relating to college student emotionality. Students were asked to indicate how frequently they felt depressed; had been lonely or homesick; or felt overwhelmed by all they had to do. In addition, they were asked to rate themselves ("compared to the average person your age") on emotional health. Finally, students rated their level of personal satisfaction with the overall college experience.

Previous research has noted that the high levels of emotional stress associated with collegiate athletics may detract from the stability and emotional well-being of student participants, interfering with their personal development. This set of five regressions has been performed to test hypotheses (noted in chapter 3) relevant to emotional development.

The regression on feeling depressed was performed to see if athletic participation in general, or any of its subsets, contribute to the prediction of depression. The total variance accounted for by all the variables in this regression equation (multiple R =.20) is quite modest, suggesting that it may be difficult to predict such a varied, personal outcome as depression. As shown in Table 1 (multiple R=.20), the students who reported the most problems with depression were women (.11), non-whites (.06), and fine arts majors (.06). Business majors (-.08), those who were involved in intramurals (-.07), and students with high grade point averages (-.06) were the least likely to report being depressed. Also, students who were satisfied with their opportunities to talk with professors (-.09) were less likely to report high levels of depression.

Athletic participation did not enter the regression equation as a statistically significant predictor of feeling depressed, once all the other independent variables had entered. However it did have a significant simple correlation with the outcome variable (r=-.06); beta values are given at the bottom of the table. Without any other information, the negative sign would suggest that varsity athletic participation, for this sample, may be an anti-depressant activity. Being a black athlete also had a significant simple correlation (r=-.05). However, the athletic participation and black athlete variables both became non-significant when intramurals entered the equation. The simple correlations suggest one thing; the partial beta coefficients suggest another. This ambiguity demonstrates the necessity of controlling for other variables to get a more complete and accurate understanding of the role of individual variables.

Table 1
Predictors of Feeling Depressed (n = 1,420)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7
Gender: Female	1	.12	.12	12	11	11	12	10	11	10
Race: White	2	.13	-.06	-06	-06	-06	-05	-05	-05	-05
Major: Business	3	.15	-.08	-07	-08	-08	-08	-08	-08	-08
College grades	4	.16	-.05	-07	-06	-07	-07	-07	-07	-06
Intramural sports	5	.18	-.09	-07	-07	-07	-07	-07	-07	-06
Major: Fine arts	6	.19	.06	06	06	05	05	05	05	05
Satisfaction: Opportunities to talk with professors	7	.20	-.09	-09	-09	-09	-08	-07	-07	-07

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

These results reflect the partial confounding of the variables. In fact, 78% of the athletes in this sample (n=589), and 83% of the black athletes (n=29) participated in intramural sports activities. This constitutes a major confounding of effects: It is thus impossible to separate completely the shared variance accounted for by these three variables. Since the beta coefficients for these three athletic variables (intramural sports, black athlete, and general varsity athletic participation) were not significantly different from each other at the step where intramural sports entered, one cannot conclude that being in intramural sports is important while the other two variables are not. All we can conclude is that they all share some common element which is negatively related to this dependent variable. Similar ambiguities will crop up in many of the other regressions reported in this chapter.

The regression on feeling lonely or homesick produced another modest result: multiple R=.22. None of the athletic variables entered the equation, nor was any of them significantly correlated with the dependent variable in any direction. Table 2 shows that women reported the highest frequency of loneliness or homesickness (beta=.16), followed by students who attended highly selective schools (beta=.08) and those who attended public institutions (beta=.08). Competitive environments at highly selective institutions may tend to create stress and pressure. Also, the dominant, traditional male ethos on many campuses (including sexism and chauvinism) may account for negative emotional experiences reported by women. Prevalent conditions may not provide the optimum surroundings for women to feel connected. In the same vein, large, impersonal public institutions may foster greater alienation, detachment, and emotional stress among a large number of students.

Table 2
Predictors of Feeling Lonely or Homesick (n = 1,417)

		Multiple	Simple	Beta at Step						
Name	Step	R	r	1	2	3	4	5	6	7
Gender: Female	1	.15	.15	15	15	15	15	16	16	15
Race: Chicano	2	.17	.06	06	06	06	06	06	06	06
Other religious preference	3	.18	.06	06	06	06	06	06	06	06
Institution: Private	4	.19	-.05	-06	-06	-06	-06	-08	-10	-08
Institution: Highly selective	5	.20	.05	06	06	06	08	08	08	08
Part-time job on campus	6	.21	.06	05	05	04	06	06	06	06
Satisfaction: Opportunities to talk with professors	7	.22	-.07	-06	-06	-06	-05	-06	-06	-06
Variables not in the equation										
Football player			-.06	-03	-03	-03	-02	-02	-02	-02

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

Surprisingly, students who held part-time jobs on campus reported a greater degree of loneliness or homesickness (beta=.06) than other groups did. It is generally thought that this activity contributes to greater student involvement or connectedness with campus life (Astin, 1975, 1977). This may be a surrogate variable for a student's economic status or an indicator of inadequate financial resources (work study is usually part of the financial aid package). It could be argued that these students may need to work, and therefore cannot go home on weekends and holidays. We might thus be tempted to conclude that having a part-time job on campus is a crude proxy for economic status. This argument, however, is not supported by the fact that parental education and income failed to enter the regression.

Consistent with previous research, students who were satisfied with their opportunities to talk to professors reported fewer experiences of feeling lonely or homesick than did their counterparts (beta=-.06). Although not in the equation, playing football was significantly correlated with the outcome (r=-.06). Finally, while not statistically significant, the correlation between athletic participation and feeling lonely or homesick was also negative (r=-.04).

Table 3 presents the results of the regression on "feeling overwhelmed by all I have to do" (multiple R=.31). Women (beta=.18) were the most likely to report a high frequency of this problem, followed by fine arts majors (beta=.10), engineering majors (beta=.09), and students who planned to enter one of the health professions (beta=.08). The latter two are not surprising, since math and science curricula are particularly competitive and rigorous. It may also be that the competitive pressures for performance experienced by fine arts majors is also reflected in this regression.

Table 3
Predictors of Feeling Overwhelmed (n =1,419)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13
Gender: Female	1	.18	.18	18	18	18	20	19	19	18	18	19	17	17	17	17
Father's education	2	.20	-.08	-09	-09	-09	-09	-08	-09	-08	-08	-07	-07	-06	-06	-05
Major: Fine arts	3	.22	.09	09	10	10	10	10	10	11	11	10	10	11	11	11
Major: Engineering	4	.24	.06	09	09	09	09	10	10	10	11	10	11	11	12	11
Major: Health sciences	5	.26	.11	09	08	08	09	09	09	09	09	09	09	10	10	10
Major: Undecided	6	.26	-.06	-07	-07	-07	-07	-06	-06	-06	-06	-07	-07	-07	-07	-07
Major: Other non-technical field	7	.27	.06	05	05	05	06	06	06	06	06	06	06	07	07	07
Part-time job on campus	8	.28	.07	05	05	05	06	06	06	06	06	06	07	07	07	08
College grades	9	.28	-.04	-06	-05	-05	-05	-05	-06	-06	-07	-07	-07	-07	-07	-07
Intramural sports	10	.29	-.10	-06	-06	-06	-06	-06	-06	-06	-06	-07	-07	-07	-07	-04
Major: Education	11	.30	.06	04	03	03	04	05	05	05	06	06	06	06	06	06
Major: Other technical field	12	.30	.04	04	04	04	05	05	05	06	06	06	05	06	06	06
Intercollegiate athlete	13	.31	-.08	-09	-08	-08	-07	-07	-07	-07	-08	-08	-06	-06	-06	-06
Variables not in the equation																
Division I Athlete			-.07	-05	-04	-04	-04	-04	-04	-04	-04	-04	-03	-03	-03	-01
Revenue sport athlete			-.05	-04	-04	-04	-03	-04	-04	-04	-04	-04	-03	-03	-03	-02
Football player			-.09	-05	-05	-05	-05	-05	-06	-06	-06	-06	-06	-06	-06	-05
Black athlete			-.05	-06	-06	-06	-06	-05	-05	-05	-06	-07	-05	-05	-05	-00
Big-time athlete			-.06	-05	-05	-05	-05	-05	-05	-05	-05	-05	-04	-05	-05	-03

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

Students whose fathers had a high level of education were less likely to feel overwhelmed (beta=-.09), possibly due to their greater parental support. Those who were undecided about their major choice were also less likely to report feeling overwhelmed (beta=-.07). Perhaps these students have delayed the decision to commit to a particular major and thus do not feel pressured to meet specific curricular demands. Still, this finding seems counterintuitive; being an undecided major in the fourth year in college is expected to pose somewhat of a burden.

That students with higher grade point averages were less likely to feel overwhelmed makes sense, since they were experiencing academic success (beta=-.05). Those who participated in intramural sports activities were also less likely to feel overwhelmed (beta=-.06), consistent with the hypothesized benefits of involvement in physical recreation. Interestingly, education majors (beta=.03) and those majoring in various technical fields (beta=.04) both reported a greater tendency towards feeling overwhelmed than many of their peers. Education majors may be feeling pressures associated with the imminent transition from a low-key "student" status to that of an adult authority figure, an "expert" who will be teaching others. Similarly, students who are attempting to master technical skills are preparing for an imminent job situation where they will be expected to know what they are doing. They may thus be experiencing the pressures associated with taking the next step to employment.

After input controls intercollegiate athletic participation had a beta of -.08. Blocked after all other environmental activities, it entered the regression equation (still significant) at the last step (beta=-.06). Athletes are less likely to feel overwhelmed than other students are. In fact, the "variables not entering"

section in Table 3 shows that five additional athletic variables had statistically significant simple correlations with the dependent variable, and that all five were negatively related to feeling overwhelmed. Division One athletes (r=-.07), those in revenue sports (r=-.05), football players (r=-.09), black athletes (r=-.05), and big-time athletes (r=-.06) were all unlikely to feel overwhelmed by their college experience. Clearly, athletic participation, in this sample, did not cause athletes to feel overwhelmed. It may be that the rigor and discipline of athletics helps in this regard. A highly structured regimen of regular practice sessions, study hours, tutorials, and other special assistance, monitored regularly, may help student-athletes to achieve a greater sense of control over their various responsibilities than nonathletes.

Results of the regression on emotional health are presented in Table 4 (multiple R=.28). Students with good high school grades (beta=.08), those who participated in intramural activities (beta=.18), and NCAA Division One athletes (beta=.11) reported significantly higher levels of emotional health than their peers did. Also, those who were highly satisfied with their opportunities to talk with professors (beta=.17) rated themselves better on overall emotional health than did other students. These findings are not surprising. Women in general (beta=-.10) and fine arts majors (beta=-.06), both of whom also felt more overwhelmed than their peers, joined with agriculture majors (beta=-.05) to rate themselves lower on the average in emotional health compared to other college students.

It should be acknowledged that the results based on variables pertaining to emotionality may reflect uncontrolled input variance (i.e., no pretest). In other words, it stands to reason that athletes may already be more inclined to

Table 4
Predictors of Self-rated Emotional Health (n = 1,416)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8
Gender: Female	1	.10	-.10	-10	-10	-07	-07	-06	-06	-06	-06
High School GPA	2	.13	.07	08	08	08	08	07	07	07	06
Intramural sports	3	.21	.19	17	18	18	17	17	17	16	14
Major: Fine arts	4	.22	-.06	-06	-06	-06	-06	-06	-06	-06	-05
Part-time job off campus	5	.23	-.09	-08	-07	-06	-06	-06	-06	-05	-04
Major: Agriculture	6	.24	-.05	-05	-05	-05	-05	-05	-05	-05	-04
Division I Athlete	7	.25	.12	11	11	10	09	09	09	09	09
Satisfaction: Opportunities to talk with professors	8	.28	.17	17	17	14	14	13	13	14	14
Variables not in the equation											
Intercollegiate athlete			.12	12	12	06	06	05	05	02	-01
Scholarship athlete			.07	06	07	05	05	05	05	03	03
Revenue sport athlete			.07	06	06	04	04	03	03	03	02
Basketball player			.05	07	07	05	04	04	04	04	03
Black athlete			.11	11	11	06	06	06	06	03	01
Big-time athlete			.10	09	09	07	07	07	07	02	02

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

rate themselves high on emotional health when they initially enter college. Since virtually all college athletes were also high school athletes, the observed group differences may have been in place at entry to college. Thus, these findings should be interpreted cautiously.

Interestingly, a separate analysis of women only revealed that Division One athletic participation was a positive predictor of self-reported emotional health. This supports the notion that athletics in general have a positive effect on emotional well-being, focus, and mental discipline. Also, women athletes competing in Division One (like their male counterparts) typically receive additional counseling and other support services to help them negotiate college life.

The self-reported emotional difficulties of college women should be balanced by a recognition that our society encourages various gender stereotypes in this area. Women in general are allowed and encouraged to express their emotions, whereas men are not supposed to show their feelings. Therefore, the women in this sample may not actually be more depressed, lonely, and overwhelmed than their male counterparts are; they may simply be more open in reporting their feelings. Similarly, fine arts majors may find themselves in an environment more hospitable to the expression of feelings. In this connection, it must also be recognized that the "macho" environment surrounding intercollegiate athletics may discourage or inhibit male athletes from acknowledging their own emotional problems. The athletic environment emphasizes "get tough" mental discipline or "hardiness" to overcome perceived personal difficulties, rather than a self-analysis which recognizes the existence of emotional turmoil.

In the "variables not in the equation" section of Table 4 several additional athletic variables showed significant simple correlations with the outcome: athletic participation in general (r=.12); scholarship athletes r=.07); those who played revenue sports (r=.07); basketball players (r=.05); black athletes (r=.11); and big-time athletes (r=.10). All six were positively related to emotional health, bolstering the proposed link between athletics and emotional fitness. Intercollegiate athletic participation is favorably associated with emotional health (including big-time, Division One, scholarship athletes in revenue sports).

The emotional benefits of athletic participation suggested by these analyses can be accounted for by a combination of four theories. First, the disciplined, highly structured lifestyle of an athlete may prove to be an ideal regimen for coping with a busy schedule and multiple commitments and responsibilities. Second, athletic department services may provide the necessary support and direction for athletes to successfully negotiate their demanding schedules. Third, collegiate athletics may produce a healthy balance between physical and mental exertion: moderate, regular exercise in itself may produce high levels of endorphins in the body, thus yielding the emotional benefits of elation and feelings of well-being. Finally, it should be noted that the "macho" aspects of the athletic environment may dissuade athletes from acknowledging their emotional problems.

A related variable is student satisfaction with the overall college experience. As shown in Table 5, the first predictor of 1988 satisfaction was the 1984 pretest, students' expectations that they will be satisfied (beta=.09). Not surprisingly, the most satisfied respondents were students with good high school

Table 5
Predictors of Satisfaction With the Overall College Experience (n = 1,367)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12
Likely to be satisfied	1	.15	.15	15	12	11	10	09	10	09	09	09	09	09	09
High School GPA	2	.20	.17	14	14	13	10	10	12	11	06	05	05	05	06
Mother's education	3	.22	.12	10	09	09	07	07	07	07	06	06	06	06	06
Institution: Highly selective	4	.24	.18	16	12	10	10	13	10	09	09	07	08	09	08
Traditionally Black Institution	5	.25	.02	03	05	05	08	08	08	08	08	07	07	07	07
Intramural sports	6	.30	.18	18	19	18	17	17	17	17	18	17	16	16	16
Part-time job on campus	7	.33	.15	14	13	13	12	12	12	12	11	12	11	11	11
College grades	8	.34	.15	13	09	08	09	09	11	10	10	11	10	10	10
Part-time job off campus	9	.35	-.14	-13	-12	-11	-10	-09	-08	-09	-09	-09	-09	-09	-10
Elected to student government	10	.35	.12	11	11	11	11	11	09	08	07	07	07	07	07
Major: Business	11	.36	.01	02	04	05	07	07	05	06	06	07	07	07	07
Major: History/Political science	12	.37	.09	09	08	07	06	06	06	06	05	05	05	06	06
Variables not in the equation															
Intercollegiate athlete			.14	12	12	11	10	09	04	03	03	03	03	03	03
Division I Athlete			.07	06	06	06	04	04	02	03	03	03	03	03	03
Black athlete			.11	10	11	10	09	08	02	01	01	01	01	01	01

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

Table 6
Predictors of Self-rated Drive to Achieve (n = 1,418)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13	14
High School GPA	1	.15	.15	15	16	16	17	14	03	03	03	03	03	02	03	03	03
Gender: Female	2	.17	-.07	-08	-08	-09	-09	-08	-09	-09	-06	-06	-06	-05	-07	-06	-06
No religious preference	3	.19	-.08	-08	-08	-08	-08	-09	-10	-10	-09	-09	-09	-09	-08	-08	-08
Race: Black	4	.20	.03	05	05	06	06	06	08	07	07	07	07	07	06	06	06
Institution: Highly selective	5	.21	.11	05	04	06	07	07	08	08	06	08	07	06	03	02	02
College grades	6	.29	.23	21	21	22	22	23	23	21	22	23	23	24	23	24	22
Elected to student government	7	.34	.20	20	19	19	19	19	18	18	16	16	16	16	17	17	16
Intramural sports	8	.36	.15	16	15	15	14	14	15	13	13	13	12	12	07	08	07
Major: Business	9	.37	.04	06	06	05	05	06	07	07	06	06	07	07	08	07	08
Part-time job off campus	10	.37	-.10	-08	-08	-08	-08	-07	-08	-07	-06	-07	-07	-06	-06	-06	-04
Major: Engineering	11	.37	.06	04	03	03	03	02	05	05	05	06	05	05	06	06	07
Intercollegiate athlete	12	.39	.16	16	17	17	17	16	16	16	13	13	13	13	13	09	07
Division I Athlete	13	.40	.15	14	14	14	14	13	13	14	13	13	13	13	09	09	10
Satisfaction: Opportunities to talk with professors	14	.42	.21	19	19	19	19	18	16	15	13	13	13	13	12	13	13
Variables not in the equation																	
Scholarship athlete			.08	08	08	08	07	08	09	09	08	08	08	08	04	02	03
Revenue sport athlete			.07	08	07	07	07	07	08	08	06	06	06	06	03	03	02
Football player			.06	07	06	06	06	06	07	06	05	05	05	05	03	03	03
Swimming/Water Polo			.07	07	06	06	06	06	06	06	06	07	06	06	04	03	04
Black athlete			.16	16	17	17	19	18	19	18	15	15	15	15	01	00	-00
Big-time athlete			.14	13	12	12	12	12	13	14	13	12	12	12	09	05	05

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

grades (beta=.10), those whose mothers were well educated (beta=.07), and those who went to highly selective schools (beta=.13) or traditionally black institutions (beta=.08). These entry characteristics (R^2=.063) accounted for nearly half of the predictive power in the final equation (R^2=.137).

Intramural sport participation (beta=.17), holding a part-time job on campus (beta=.12), being elected to student office (beta=.07), and getting good college grades (beta=.09) emerged as the strongest college-activity predictors of overall satisfaction, suggesting that various forms of involvement in campus life have positive effects. Consistent with this finding, students who held off-campus part-time jobs (beta=-.09) were not likely to report high levels of satisfaction. These students were probably less involved in campus life, since they spent more time physically off-campus than highly involved students did. Business majors (beta=.07) and history and political science majors (beta=.06) also reported high levels of satisfaction.

The "variables not in the equation" section of Table 5 shows that three athletic variables were significantly correlated with high levels of satisfaction with the overall college experience. General athletic participation (r=.14) and being a black athlete (r=.11) both became non-significant when intramural sports entered, due to confounding of the variables. The effects of athletic participation disappeared once intramural participation was controlled. Division One participation (r=.07) became non-significant when institutional selectivity entered. The Division One athletes in this sample are heavily concentrated in highly selective institutions. These findings are consistent with previous research on satisfaction, sustaining the basic notion of the involvement theory. Since athletes are highly involved in their campuses, they tend to be

more satisfied with college in general. Athletic participation thus creates strong connections between students and their institutions.

In addition to greater satisfaction with the overall college experience, athletic participation was positively associated with eight other satisfaction variables: opportunity to talk with professors (r=.17); opportunities for extracurricular activities (r=.34); campus social life (r=.11); academic tutoring and assistance (r=.16); academic advising (r=.13); career counseling (r=.12); contact with faculty and administrators (r=.16); and relations with faculty and administrators (r=.15). The consistently high degree of satisfaction with various college experiences reported by intercollegiate athletes reflects the high levels of involvement associated with athletic participation.

Values and Goals

Among the lofty, stated goals of athletics is teaching participants to strive for excellence and to aspire to accomplish great things. The presumed values of intercollegiate competitiveness and cooperative teamwork are incorporated into this philosophy of achievement, as necessary components for success in any field. This set of regression analyses focuses on motivation and achievement, competitiveness, and degree aspirations. Materialistic values and self-reported academic dishonesty behaviors are also examined.

The regression on the drive to achieve is presented in Table 6 (multiple R=.42). These results have to be interpreted with caution, due to the lack of a pretest on the self-ratings. Students with good high school grades (beta=.14) and good college grades (beta=.23), black students (beta=.06), and those who attended highly selective institutions (beta=.07) reported the strongest drive to

Table 7
Predictors of Self-rated Competitiveness (n = 1,418)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gender: Female	1	.18	-.18	-18	-19	-19	-19	-18	-18	-13	-13	-13	-13	-17	-15	-16	-15
No religious preference	2	.21	-.08	-09	-09	-09	-09	-10	-10	-09	-09	-09	-09	-08	-08	-08	-08
High School GPA	3	.22	.06	07	07	07	07	04	04	06	06	03	02	05	05	04	04
Race: Puerto Rican	4	.22	-.06	-06	-06	-06	-06	-06	-06	-05	-05	-05	-05	-04	-04	-04	-04
Institution: Highly selective	5	.24	.09	08	10	08	08	08	08	04	05	06	06	00	-01	-00	-01
Institution: Coeducational	6	.24	.08	07	07	07	07	06	06	06	05	06	06	03	03	03	03
Intramural sports	7	.35	.30	27	27	27	27	26	26	26	26	26	25	16	17	17	16
Major: Business	8	.36	.09	09	08	09	09	11	10	08	08	09	09	09	09	09	09
College grades	9	.37	.05	07	07	05	05	05	06	08	08	08	07	07	07	07	06
Elected to student government	10	.37	.10	10	10	09	10	10	10	07	07	06	06	07	07	08	07
Intercollegiate athlete	11	.44	.31	32	32	32	32	32	32	25	26	25	26	26	20	19	17
Division I Athlete	12	.45	.24	22	22	22	22	22	21	19	19	19	20	12	12	12	13
Basketball player	13	.46	.13	14	14	14	13	14	14	10	10	10	11	06	06	06	06
Satisfaction: Opportunities to talk with professors	14	.46	.17	17	17	16	16	15	15	12	12	12	11	09	10	09	09
Variables not in the equation																	
Scholarship athlete			.15	14	14	15	14	16	15	13	13	13	13	05	03	02	02
Revenue sport athlete			.18	16	16	16	16	16	16	13	12	13	13	06	07	04	04
Football player			.11	09	09	09	09	09	09	07	07	07	07	02	02	03	03
Swimming/Water Polo			.08	07	06	06	06	06	06	06	06	06	06	01	00	01	01
Black athlete			.27	28	28	29	29	28	28	22	22	22	22	06	05	05	05
Big-time athlete			.24	22	22	22	22	22	22	19	19	19	20	12	07	04	04

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

achieve. Women (beta=-.08), students with no religious preference (beta=-.09), and those who worked part-time off-campus (beta=-.07) all rated themselves lower on this scale. Students who were elected to student office (beta=.19), who participated in intramurals (beta=.14), who were business majors (beta=.06) or engineering majors (beta=.02), and those who were satisfied with professorial interactions (beta=.18) all reported a relatively strong drive to achieve.

In addition, general athletic participation entered at step 12 as a statistically significant predictor of the drive to achieve (beta=.13). Division One athletic participation (beta=.09) also proved to be a significant contributor to the equation. Since these two athletic participation variables are substantially correlated, the entry of each one (steps 12 and 13) diminishes the contribution of the other. Both, however, remain significant in the final equation. Several variables not in the equation were also significantly correlated with the drive to achieve. Being a scholarship athlete (r=.08), participating in revenue sports (r=.07), being a football player (r=.06), swimmer (r=.07), black athlete (r=.16), or big-time athlete (r=.14) were all positively associated with the drive to achieve. These findings are consistent with previous research on competitive sports, in that athletic participation seems to strengthen college students' drive to achieve.

Similar results were found on students' self-rating of their competitiveness compared to peers of the same age. The lack of a pretest, once again, requires a cautious interpretation. Table 7 (multiple R=.46) shows, as expected, that men (beta=.18) and students with good high school grades (beta=.04) and good college grades (beta=.06) were the most competitive. Also, students attending highly selective schools (beta=.08) and those at coeducational

Table 8
Predictors of Degree Aspirations (n = 1,176)

Name	Step	Mult. R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Degree aspirations 1984	1	.34	.34	34	31	29	29	28	29	27	25	24	24	23	23	22	21	21	21	21	21	21
High School GPA	2	.38	.23	15	15	15	15	14	14	04	04	03	04	04	04	04	04	04	03	03	03	03
Father's education	3	.38	.16	08	08	08	08	07	07	06	06	06	05	05	04	04	04	05	05	04	04	04
Race: Other	4	.39	.06	06	06	06	06	05	05	05	05	05	05	05	05	05	05	05	05	05	05	05
Institution: Private	5	.40	.17	13	12	11	11	11	11	09	10	09	08	08	07	07	07	07	07	07	07	06
Institution: Coeducational	6	.41	-.06	-07	-07	-06	-06	-06	-06	-05	-05	-06	-05	-06	-06	-06	-06	-06	-05	-06	-06	-06
College grades	7	.45	.31	25	23	22	22	22	21	21	21	21	21	20	20	20	20	20	20	21	21	20
Major: Biological sciences	8	.46	.17	12	11	11	11	11	11	11	11	12	12	13	13	12	12	11	11	10	10	09
Major: Social sciences	9	.47	.13	09	09	09	09	08	08	08	10	10	10	11	11	10	09	09	07	07	07	07
Elected to student gov't.	10	.48	.13	11	11	11	11	10	10	08	08	08	08	08	08	08	07	07	07	07	06	06
Major: History/Pol. Sci.	11	.48	.11	07	07	07	07	06	06	05	06	08	08	08	08	07	06	05	04	04	04	04
Fraternity/Sorority	12	.49	.08	07	07	07	06	06	06	07	07	07	07	07	07	07	07	08	07	07	07	07
Major: Business	13	.49	-.19	-13	-11	-11	-11	-10	-10	-10	-09	-07	-07	-06	-07	-07	-07	-08	-09	-10	-11	-10
Worked on pol. campaign	14	.50	.12	08	09	09	09	09	09	08	09	08	07	06	06	07	07	07	07	07	07	07
Major: Fine arts	15	.50	-.07	-06	-06	-06	-06	-07	-07	-07	-07	-06	-06	-06	-06	-07	-07	-07	-07	-07	-07	-07
Major: Other non-technical field	16	.50	-.10	-09	-08	-07	-07	-07	-07	-07	-07	-06	-06	-05	-05	-06	-06	-07	-07	-07	-07	-07
Intramural sports	17	.50	.05	06	06	06	06	05	06	08	07	07	06	06	05	06	06	06	06	06	06	05
Major: Other tech. field	18	.50	-.08	-06	-06	-06	-06	-06	-06	-05	-05	-04	-04	-04	-03	-04	-04	-05	-05	-05	-05	-05
Satisfaction: Opportunities to talk with professors	19	.51	.17	14	13	12	12	10	10	08	07	08	07	07	07	07	07	06	06	06	05	05
Variables not in the equation																						
Intercollegiate athlete			.09	07	07	06	06	04	05	05	05	05	05	05	05	04	05	05	05	03	03	02
Scholarship athlete			-.04	00	01	01	01	01	01	02	02	02	02	02	02	02	02	02	03	02	02	02
Black athlete			.09	06	07	07	07	05	06	07	07	07	07	07	06	07	06	06	07	05	05	05

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

institutions (beta=.06) were likely to be more competitive, as were business majors (beta=.10) and those elected to student government positions (beta=.10). Students who were satisfied with their opportunities to interact with professors were also highly competitive (beta=.15), suggesting that competitiveness is closely related to assertiveness and the desire to interact. This significant association is particularly impressive, given that this variable (as an intermediate outcome) was in the very last block of the regression equation. Women (beta=-.18) and Puerto Rican students (beta=-.06) were the least likely to rate themselves as highly competitive.

Students who participated in intramural sports (beta=.26) rated themselves as highly competitive, although the confounding of this variable with athletic participation makes this result somewhat ambiguous. Intramurals are theoretically not as "competitive" as intercollegiate sports; but all sports are competitive to some degree. Student-athletes were highly competitive, as expected (beta=.32). In addition, athletes competing at the Division One level were highly competitive (beta=.21), as were basketball players (beta=.14). These variables still contributed to the equation even after the effects of all other variables had been controlled. In Division One sports, competitiveness is exaggerated and strengthened by the large crowds at events, televised performances, and extensive coverage by newspapers and other media.

It is interesting that a particular major sport entered the regression. Basketball may be the most competitive of major sports, with unique opportunities for one-on-one rivalries between players. As a very fast-paced, exciting, and intense sport, it seems to personify the notion of competitiveness. The lack of a pretest on the dependent variable, however, creates some

ambiguity in interpreting the results. Increased competitiveness may thus be an effect of playing basketball in college, or it may reflect who plays basketball in the first place. The postulated effects of playing basketball may occur earlier in high school or junior high school, when organized games begin.

Variables not in the equation but which have significant simple correlations with competitiveness include being a scholarship athlete (r=.15), playing football (r=.11), being a swimmer or playing water polo (r=.08), participating in a revenue sport (r=.18), being a black athlete (r=.27), and being a big-time athlete (r=.24). The last two, both interaction terms, had substantial simple correlation coefficients. That the respective entries of intramural sports and athletic participation at steps 7 and 11 caused major drops in the beta values of black athlete and big-time athlete makes sense, since athletic participation accounts for half of the variance in the black athlete variable and one third of the variance in the big-time athlete variable. In short, competitiveness appears to be an integral part of the intercollegiate athletic experience.

Athletes tend to view competitiveness as a positive trait, despite the prevalence of opinions to the contrary. Responses to a supplemental question given to athletes only confirm this notion. A full 92% of the athletes surveyed (n=686) agreed that, for them, competition was good, because it made them strive for excellence. Of these, 58% (n=432) agreed strongly; and 34% (n=254) agreed somewhat. Only 8% (n=56) disagreed with the idea that competition was beneficial. Of these, 6% (n=45) disagreed only somewhat. Thus less than 2% (n=11) disagreed strongly with this belief. Clearly these participants who were directly involved in intercollegiate athletics have attributed positive effects to the competition associated with their sporting activity.

Related to the characteristics of competitiveness and the drive to achieve are a student's future academic goals. Table 8 presents the results of the regression on degree aspirations (multiple R=.51). With both pretest and posttest data on each student, this regression measures actual changes between college entry and the follow-up survey four years later. The 1984 pretest was the strongest predictor, as expected (beta=.29). Students with good high school grades (beta=.14) and good college grades (beta=.21), and those whose fathers were well-educated (beta=.07), or who attended private institions (beta=.11) were likely to report the largest positive changes in degree aspirations. Attending a co-educational institution was negatively associated with increased aspirations (beta=-.06), as was majoring in business (beta=-.10) or in fine arts (beta=-.07).

Majoring in either biological sciences (beta=.11), social sciences (beta=.08), history or political science (beta=.06) was associated with positive changes in degree aspirations. Being highly involved in campus life also produced positive coefficients. Those who were elected to student government (beta=.10), joined a fraternity or sorority (beta=.06), worked on political campaigns (beta=.09), or participated in intramural sports (beta=.06) experienced positive changes in degree aspirations, as did students who were satisfied with their opportunities to talk with professors (beta=.10).

Three athletic involvement variables were significantly associated with residual degree aspirations. Athletes in general (r=.09) and black athletes (r=.09) tended to have positive increases in aspirations, while scholarship athletes (r=-.04) showed small negative changes. Although athletic participation is associated with high aspirations for blacks and most other college students, it

Table 9

Predictors of Student Materialism: The Importance of Being Very Well Off Financially (n = 1,378)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13
Importance of being very well off financially (pretest)	1	.46	.46	46	44	43	43	42	41	40	40	39	38	38	38	38
High School GPA	2	.47	-.19	-12	-12	-12	-11	-11	-08	-03	-05	-05	-05	-05	-05	-05
Race: White	3	.48	-.12	-07	-06	-06	-06	-07	-06	-05	-05	-05	-05	-05	-05	-05
Mother's education	4	.48	-.09	-07	-06	-06	-06	-06	-05	-05	-06	-06	-06	-06	-06	-06
Gender: Female	5	.48	-.12	-05	-04	-05	-05	-05	-05	-04	-03	-03	-03	-03	-03	-03
Major: Business	6	.51	.24	19	18	18	18	18	18	17	16	15	14	16	15	15
College grades	7	.52	-.23	-16	-13	-13	-13	-12	-12	-12	-11	-11	-10	-10	-10	-10
Major: Education	8	.53	-.14	-12	-13	-12	-13	-13	-10	-10	-10	-09	-10	-09	-10	-10
Fraternity/Sorority	9	.54	.15	10	10	10	11	10	09	09	09	09	09	09	09	09
Major: Humanities	10	.54	-.14	-10	-10	-10	-09	-09	-08	-07	-08	-08	-08	-08	-08	-08
Major: Social sciences	11	.55	.05	04	04	04	04	05	08	08	07	06	06	06	05	05
Major: Biological sciences	12	.55	-.08	-07	-06	-06	-05	-06	-04	-04	-05	-05	-05	-05	-05	-05
Revenue sport athlete	13	.55	.11	07	07	07	06	06	05	05	05	05	05	05	05	05
Variables not in the equation																
Football player			.09	06	05	05	05	05	05	04	05	04	04	04	04	02
Black athlete			.06	03	02	00	01	01	02	01	01	01	01	01	01	-01
Big-time athlete			.08	05	05	04	04	04	04	03	04	03	03	03	03	00

$p < .05$

Note: Decimals have been omitted.

Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

appears that scholarship athletes in particular do not receive the same benefit. This can be attributed to a number of factors, including athletic tunnel-vision and poor academic preparation. Thirty-two percent of the scholarship athletes in this sample reported a desire to have a career in professional sports; and 12% actually thought they had a good chance for a pro career, evidencing an unrealistic, narrow focus. Scholarship athletes also tend to get low grades in both high school (r=-.08) and college (r=-.07), which may be due to an over-emphasis on athletic activities. This tunnel vision may reduce their options and stymie their aspirations for any subsequent degree programs.

Table 9 shows the variables which predict student valuing of the importance of being very well off financially (also referred to as materialism). The 1984 pretest (r=.42) accounted for most of the variation in the equation (final multiple R=.55). While the other 12 variables together added only .09 to the multiple correlation, they added .126 to the multiple R^2 (as contrasted to .176 contributed by the pretest. High school grades (beta=-.11), mother's education (beta=-.06), being white (beta=-.07), and being a woman (beta=-.05) were all negatively related to changes in materialism. College grades (beta=-.12), majoring in education (beta=-.13), majoring in humanities (beta=-.09), and majoring in biological sciences (beta=-.06) each had a depressing effect on wanting to be very well off financially. This makes sense in light of the fact that people in these fields are probably relatively unmotivated by money. The academic involvement of these students may be geared towards science or a service profession, which may play down the notion of financial rewards relating to career choice. Consistent with stereotypical expectations, majoring in business (beta=.18) seemed to strengthen materialism, as did fraternity and

Table 10
Predictors of Self-reported Cheating (n = 1,417)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12
High School GPA	1	.15	-.15	-15	-14	-11	-11	-04	-04	-04	-03	-03	-03	-03	-03
Gender: Female	2	.16	-.07	-06	-06	-07	-06	-05	-03	-03	-04	-05	-05	-04	-04
Institution: Highly selective	3	.17	-.11	-06	-06	-06	-07	-07	-09	-07	-06	-06	-07	-07	-08
Institution: Coeducational	4	.18	.05	05	05	05	05	05	04	04	04	04	03	03	03
College grades	5	.22	-.19	-15	-15	-15	-15	-15	-14	-14	-14	-14	-14	-14	-14
Intramural sports	6	.24	.12	12	11	12	12	11	11	10	10	10	08	08	08
Major: Business	7	.25	.12	10	10	09	09	08	08	08	09	10	10	10	10
Major: Education	8	.27	.06	05	06	05	06	06	07	08	08	09	09	09	08
Major: Social sciences	9	.28	.04	05	05	05	05	05	05	07	08	08	08	08	08
Intercollegiate athlete	10	.28	.08	08	08	10	10	10	06	07	06	06	06	04	13
Football player	11	.29	.10	10	09	09	09	09	08	08	07	07	06	06	06
Black athlete	12	.29	.06	05	05	06	06	05	02	02	02	02	-10	-10	-10
Variables not in the equation															
Scholarship athlete			.08	07	07	06	06	06	04	04	04	04	02	01	02
Revenue sport athlete			.08	07	06	06	06	05	04	04	03	03	01	-05	-05
Big-time athlete			.09	08	08	08	08	07	06	06	05	05	03	01	01

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

sorority membership (beta=.10). Why majoring in the social sciences (beta=.05) was also positively associated with materialism is not clear.

Athletes who played revenue sports were also likely to have increased their materialistic values (beta=.06). Certainly something happened in the so-called "major sports" programs to influence these student values. The intense scouting and recruiting processes, along with the tremendous publicity given to the salaries paid to star professional athletes, no doubt combine to focus the college athlete's attention on financial rewards. Big-time sports these days are clearly associated with materialism. These results thus suggest that exposure to the hedonistic values and lifestyles of well-to-do athletic boosters may affect the values of football and basketball players. This interpretation is supported by the fact that this is one of the only regressions where several intercollegiate athletic participation variables, but <u>not</u> intramural participation, produced significant correlations with the dependent variable. The "variables not in the equation" section further sustains this belief, as being a football player (r=.09), a black athlete (r=.06), or a big-time athlete (r=.08) was each significantly correlated with the outcome of materialism.

Sometimes a focus on certain goals and values can be taken to extremes, resulting in a lack of ethical standards. Athletes may find themselves in situational dilemmas relating to time constraints. Specifically, they may not have enough time (or energy) to complete academic assignments. Or, they may not organize their time well enough to meet the demands of both sport and study. Recent research (Hanson, 1989) has linked college athletic participation to academic dishonesty behaviors.

Students in this sample were asked how frequently they cheated on a school quiz or exam. Table 10 presents the results of a regression analysis on self-reported cheating (multiple R=.29). Women (beta=-.06), students who received good high school grades (beta=-.11), those who attended highly selective institutions (beta=-.07), and those who got good college grades (beta=-.15) all reported relatively few instances of academic dishonesty.

Students who attended co-educational institutions (beta=.05) or who majored in business (beta=.09), education (beta=.06), or social sciences (beta=.05) reported relatively high frequencies of cheating, along with those who participated in intramural sports (beta=.12) and intercollegiate athletics (beta=.10). Specifically, football players (beta=.09) were more inclined to cheat than were non-athletes or athletes in other sports.

Black athletes also reported significantly greater amounts of cheating behaviors than other students (simple r=.06). However, when intramural participation entered at step 6, most of the effects of being a black athlete disappeared. So, it would appear that intramural participation, plus being a football player, account for the greater tendency of the black athlete to cheat. That is, the positive correlation of being a black athlete with cheating can be accounted for in terms of the greater involvement of black athletes in intramural sports and by their heavy involvement in intercollegiate football.

Indeed, once one controls for the effects of these other variables, black athletes actually cheat less. In other words, those black athletes who do not participate either in intramural sports or in football actually cheat significantly less than other students do. Thus, when general athletic participation entered the equation at step 10, the beta value for black athletes became significantly

Table 11
Predictors of Self-rated Interpersonal Skills (n = 1,405)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13	14
Attend college to meet people	1	.14	.14	14	13	13	13	13	13	12	11	11	11	11	10	10	09
High School GPA	2	.15	.08	07	07	08	08	05	06	05	05	05	05	05	05	06	05
Race: White	3	.16	-.05	-05	-05	-05	-05	-05	-06	-05	-05	-05	-05	-05	-05	-05	-05
Institution: 4-year college	4	.18	.05	06	07	07	07	08	08	08	08	08	08	08	08	08	05
Institution: Highly selective	5	.19	.09	08	06	07	08	08	08	08	07	06	06	06	06	06	05
Institution: Coeducational	6	.12	.05	05	05	05	06	05	05	06	06	06	06	06	06	06	05
Elected to student government	7	.24	.15	14	13	13	13	13	13	13	13	12	12	12	12	12	11
Fraternity/Sorority	8	.25	.10	09	09	09	09	08	08	08	08	08	08	08	08	08	07
Part-time job on campus	9	.26	.11	10	10	09	09	08	09	07	07	07	07	07	07	07	06
Major: Physical sciences	10	.27	-.05	-04	-05	-05	-05	-06	-06	-06	-06	-06	-06	-06	-07	-07	-07
Major: Education	11	.27	-.07	-07	-07	-07	-07	-06	-06	-05	-05	-05	-05	-05	-06	-06	-05
Major: Math/Statistics	12	.28	-.05	-04	-05	-05	-05	-05	-05	-05	-05	-05	-05	-05	-05	-06	-06
Major: Engineering	13	.28	-.05	-04	-04	-04	-04	-05	-05	-05	-05	-04	-04	-05	-05	-05	-05
Satisfaction: Opportunities to talk with professors	14	.30	.16	15	15	15	14	13	13	12	11	11	11	11	11	11	11
Variables not in the equation																	
Intercollegiate athlete			.07	07	07	07	06	04	04	04	04	03	03	03	03	03	02
Basketball player			.04	04	04	04	03	04	04	04	04	04	04	04	04	04	03
Black athlete			.06	04	05	04	03	01	01	00	00	00	-00	00	00	-00	-01

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

negative. This sign reversal indicates that once certain variables are controlled, the true effects of the variable are in the opposite direction (final beta=-.10). Interaction effects are always difficult to interpret. In this case it appears that black athletes who are in sports other than football, especially those who do not participate in intramural sports, are less likely than other students to cheat.

Another interesting result occurred with general athletic participation. At step 12 (when black athlete entered) the beta for general athletic participation changes from .04 to .13, indicating a suppressor effect. This result suggests that participation in sports other than football among non-blacks is substantially associated with cheating.

Betas for other variables significantly correlated with cheating are reported at the bottom of Table 10. Three additional athletic involvement subsets had significant simple correlations: scholarship athletes (r=.08), revenue sport athletes (r=.08), and big-time athletes (r=.09). The direction of the results is not totally surprising, since these athletes are the ones portrayed negatively in media accounts of academic deficiencies in college athletics. These three variables are closely tied to two others, since they all dropped to non-significance when intramural participation (step 6) and general intercollegiate athletics (step 10) entered the regression. Thus there is nothing intrinsic in these three variables that leads to greater cheating; they are all athletic variables and are associated with cheating simply because they are related to intramural and intercollegiate athletic participation. A moderate number of scholarship athletes who participate in revenue sports in big-time college programs may simply resort to cheating as the "easy way" out of academic demands.

Since athletes in general are more likely to cheat than other students are, it is useful to break down the results by specific sub-categories. For context, it should be noted that 15% of the students in this sample reported cheating behaviors. Eighteen percent of the athletes, compared with 12% of non-athletes, reported cheating. Thirty-one percent of football players admitted cheating, along with 30% of big-time athletes, 22% of revenue sport athletes, and 22% of scholarship athletes. Only 14% of black athletes reported cheating. Chi square analysis revealed all of these figures to be significant at the .01 level. In other words, these are not chance differences. The major gap between revenue sport athletes and football players indicates that basketball players (the other half of the revenue sport category) did not account for the high rate of cheating among revenue and big-time athletes. Big-time football players, however, lived up to their stereotypical non-academic image.

Another interesting analysis concerns the role of gender in cheating. In this sample 17% of the men reported cheating, compared with only 12% of the women. Looking only at athletes, 21% of the men and only 13% of the women reported cheating behaviors. Thus cheating (epitomized by the big-time football player) seems to be as much a male-related phenomenon, as it is an athletic phenomenon. This confirms recent research findings (Hanson, 1989). If the effects were due to athletic participation per se, we would expect that women athletes would be substantially different than women who were non-athletes; but they were not. Chi square analysis revealed no significant differences.

We have here what appears to be an effect of big-time sports only: rates of cheating among athletes in these sports are substantially higher (30%-31%)

than rates among male athletes in general (21%). Since gender is confounded with this athletic variable (most big-time sports participants are men), we cannot be sure whether we are seeing an interaction between gender and big-time sports or merely a main effect of big-time sports.

Social Development

Athletic involvement has been hypothesized to promote personal growth in social skills among college students. Among the proposed benefits are increased interpersonal competence, proficiency in cooperative teamwork skills, and improved leadership abilities. The associated notion of social awareness may also include greater tolerance of persons with different beliefs, and a desire to promote racial understanding. This set of regression analyses will examine college student self-reports pertaining to these social outcomes.

Students were asked to rate themselves, compared to when they entered as freshmen, on changes in their interpersonal skills. Table 11 presents the results of this regression (multiple R=.30). The pretest proxy (reason for attending college was "to meet new and interesting people") carried a moderate weight (beta=.13). Students with good high school grades (beta=.06), those attending four-year colleges (beta=.08), coeducational institutions (beta=.05), or highly selective institutions (beta=.08) were likely to report substantial improvements in their interpersonal skills, while white students in general were not likely to report significant increases (beta=-.06).

As expected, students who were involved in student government (beta=.13), fraternities or sororities (beta=.08), or who had a part-time job on campus (beta=.09) tended to report more improvement than did their peers in interpersonal skills. So, too, did students who were satisfied with their

Table 12

Predictors of Self-rated Changes in Leadership Abilities (n = 1,417)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12
No religious preference	1	.09	-.09	-09	-09	-09	-09	-08	-08	-08	-08	-08	-08	-08	-08
Race: Black	2	.10	.05	06	06	05	05	05	04	05	05	05	04	05	05
Elected to student government	3	.27	.26	26	25	25	24	24	24	23	23	23	24	24	23
Intramural sports	4	.31	.17	17	17	14	14	12	12	12	12	09	09	10	09
Fraternity/Sorority	5	.32	.13	12	12	11	09	09	09	09	09	09	09	09	09
Part-time job off campus	6	.33	-.08	-08	-08	-07	-06	-06	-06	-06	-06	-06	-06	-05	-04
Major: Other technical field	7	.33	-.06	-06	-07	-06	-06	-06	-05	-05	-05	-05	-05	-06	-05
Major: Undecided	8	.33	-.07	-07	-07	-06	-05	-05	-05	-05	-05	-05	-05	-05	-05
Intercollegiate athlete	9	.34	.10	10	10	10	06	06	06	05	06	06	04	02	01
Basketball player	10	.34	.09	08	08	09	07	07	07	07	07	07	07	07	07
Swimming/Water Polo	11	.35	.07	07	07	07	07	07	07	07	07	06	07	07	07
Satisfaction: Opportunities to talk with professors	12	.37	.18	18	18	15	14	14	13	13	13	12	12	12	12
Variables not in the equation															
Scholarship athlete			.05	04	04	04	03	03	04	04	04	02	01	01	01
Division I Athlete			.08	07	07	08	06	06	06	06	06	04	05	04	05
Revenue sport athlete			.10	10	09	10	08	08	07	07	07	06	03	04	04
Football player			.05	06	05	05	03	03	03	03	02	02	02	03	03
Black athlete			.11	11	11	11	06	06	06	05	06	-20	-22	-21	-21
Big-time athlete			.10	09	09	10	08	08	08	08	08	07	05	05	06

$p < .05$

Note: Decimals have been omitted.

Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

opportunities to talk to professors (beta=.13) On the other hand, four majors were negatively associated with reported positive changes in interpersonal skills: physical sciences (beta=-.06), mathematics/statistics (beta=-.05), engineering (beta=-.05), and education (beta=-.06). The stereotype of the math/science major as a somewhat shy or withdrawn person seems to be reinforced by these findings.

That majoring in education is also negatively associated with this self-reported change is puzzling; with the emphasis on practice teaching and working with students that characterizes teacher education programs, one would expect that majoring in education would be positively associated with improvements in interpersonal skills. This could be an anomaly, or it might be a cautionary flag for teacher training programs to take a look at how effectively they are dealing with the interpersonal competencies of students in their programs.

Although none of the athletic participation variables entered the regression equation, three had significant simple correlations with the development of interpersonal skills. Being an athlete in general (r=.07), a basketball player (r=.04), or a black athlete (r=.06) were all modestly associated with positive changes in interpersonal skills. However, these simple correlations did not hold up once other variables entered. That general athletic participation became non-significant when selectivity entered at step 5 suggests that there is a greater concentration of athletes in highly selective institutions. Thus, when the selectivity of the college is controlled for, the effects of athletic participation are diminished. Again, the lack of a pretest indicates the need for caution in interpreting these findings, which are self-reported changes. Also, the fact that athletes in this sample were highly involved with other campus

activities tends to confound the results. Significant simple correlations were found between athletic participation and the following variables, all of which entered the regression equation: being a member of a fraternity or sorority, working part-time on campus, being satisfied with one's opportunity to talk to professors, and attending a coeducational or a highly selective institution.

Intercollegiate athletics is thought by some to facilitate teamwork and cooperation within its competitive environment. On the other hand, some dichotomize competition and cooperation as incompatible opposites. The athletes in this sample (n=737) were asked to react to the statement, "My athletic experiences have not improved my ability to cooperate with others." Only 5% (n=38) agreed strongly; and another 10% (n=77) agreed somewhat. However, 29% (n=211) disagreed somewhat and fully 56% (n=411) disagreed strongly with this statement: An overwhelming total of 85% reported that their experiences went contrary to this notion. These athletes clearly believe that they excel at both competitiveness and cooperativeness, which can be complementary life skills.

A more specific variable may shed more light on the relationship between athletic involvement and the development of social skills. Table 12 presents the results of the regression on self-reported changes in leadership abilities (multiple R=.37). Students who had no religious preference were less likely to report strong increases in leadership ability (beta=-.09). Those who participated in specific religious-affiliated organizations may have had more opportunities for leadership roles. Students who took part-time jobs off-campus (beta=-.08) probably removed themselves from campus opportunities by spending time away from the locus of student organizations. Those who were

Table 13
Predictors of Self-rated Leadership Ability (n = 1,417)

		Mult.	Simple	Beta at Step																			
Name	Step	R	r	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Gender: Female	1	.15	-.15	-15	-16	-16	-16	-16	-15	-14	-11	-11	-10	-11	-11	-11	-12	-13	-13	-12	-12	-11	-11
High School GPA	2	.17	.05	07	07	08	07	07	02	01	02	03	03	03	03	03	03	04	04	04	04	04	03
Race: Black	3	.18	.05	05	06	06	07	07	08	07	07	07	07	07	07	06	07	06	06	06	06	06	06
Father's education	4	.19	.06	06	06	06	06	06	03	02	02	02	01	02	01	02	02	01	01	01	01	01	00
No religious preference	5	.20	-.04	-05	-05	-05	-05	-05	-07	-07	-06	-06	-05	-05	-05	-05	-05	-05	-05	-05	-05	-05	-05
Institution: Highly selective	6	.22	.13	12	11	13	12	13	13	14	11	12	11	12	12	11	11	09	10	10	11	10	10
Elected to student gov't.	7	.32	.23	23	22	22	22	22	22	22	20	20	20	20	19	19	19	19	19	19	19	19	19
Intramural sports	8	.37	.25	23	23	23	23	23	22	19	19	19	19	19	19	19	19	14	15	15	15	15	15
Major: Business	9	.37	.06	06	07	07	07	07	09	09	08	08	08	10	09	10	09	09	09	09	09	09	09
Major: History/Pol. Sci.	10	.38	.09	08	08	08	08	08	06	06	06	07	07	08	07	07	06	06	06	06	06	06	06
Major: Education	11	.38	-.01	01	02	02	02	02	04	04	04	06	06	06	06	06	06	05	05	05	05	05	05
Worked on pol. campaign	12	.39	.10	09	10	09	09	09	09	06	07	07	06	06	06	06	05	05	05	06	06	06	06
Part-time job on campus	13	.39	.10	11	10	10	10	10	09	06	05	06	06	06	05	05	06	05	05	06	05	06	05
Major: Other tech. field	14	.40	-.08	-08	-08	-09	-08	-09	-08	-08	-07	-06	-06	-05	-05	-05	-05	-05	-05	-06	-05	-06	-05
Intercollegiate athlete	15	.41	.20	20	20	20	19	19	18	18	12	13	12	12	12	12	12	12	08	07	05	03	01
Scholarship athlete	16	.41	.10	10	10	10	10	10	12	12	10	10	10	10	10	10	10	07	07	07	06	05	05
Swimming/Water Polo	17	.42	.08	08	07	08	07	07	07	07	07	07	07	08	08	08	08	06	06	06	07	06	07
Revenue sport athlete	18	.42	.13	12	12	11	12	12	12	12	09	09	09	09	09	09	09	06	05	06	06	07	06
Division I Athlete	19	.42	.15	14	14	14	13	13	11	12	11	11	10	10	10	10	11	07	06	06	06	06	07
Satisfaction: Opportunities to talk with professors	20	.44	.19	18	18	18	17	17	17	15	12	13	12	13	12	12	12	11	11	11	11	11	11
Variables not in the equation																							
Basketball player			.07	09	09	09	09	09	09	10	08	07	07	07	07	07	07	05	04	05	02	02	01
Football player			.10	07	07	07	07	07	07	07	05	05	06	05	06	05	05	03	02	03	-02	-02	-01
Black athlete			.19	20	20	23	22	22	21	20	14	14	14	14	14	13	13	-02	-05	-04	-04	-04	-05
Big-time athlete			.17	15	15	15	15	15	15	16	14	14	14	13	13	14	14	11	12	13	11	09	08

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

undecided about their academic majors (beta=-.07) also fared less well, possibly due to a lack of direction. On the other hand, black students (beta=.06) reported significant increases in leadership abilities.

As expected, students who were elected to student government positions (beta=.25), who participated in intramural sports (beta=.17), who were satisfied with their opportunities to talk with professors (beta=.18) or who were members of a fraternity or sorority (beta=.12) seemed to benefit from their involvement in campus life by substantially improving their leadership abilities. In addition, being an athlete in general (beta=.10), a basketball player (beta=.08), or a swimmer (beta=.07) was significantly related to positive changes in leadership abilities. The benefits of intercollegiate participation, however, can be accounted for entirely by basketball and swimming/water polo, given that the entry of these two variables reduced the beta for general athletic participation to non-significance (from .06 to .02). It would appear that these two sports in particular, with their small, close-knit team structures, may have a positive effect on changes in leadership abilities. This effect may occur because of the strong "family unit" mentality of these sports and their regular daily opportunities for participation in dynamic interpersonal interactions. Dominant team cultures, with powerful influence over individuals, are generated by participation in basketball, swimming, or water polo. Within these structures, opportunities for communication and leadership flourish. Causal inferences must be made cautiously, however, since these are retrospective self-reports.

Even though they did not enter the regression equation, six additional athletic sub-categories had significant and positive simple correlations with self-reported changes in leadership abilities. Black athletes (r=.11), big-time

athletes (r=.10), revenue sport athletes (r=.10), Division One athletes (r=.08), scholarship athletes (r=.05), and football players (r=.05) all reported positive changes in leadership abilities.

Even though these results are consistent with both previous research and coaching folklore, they have to be considered highly tentative, due to the lack of a pretest and the fact that these are self-reported retrospective changes. With these caveats in mind, the results provide further support for the notion that intercollegiate sports contribute to growth experiences which are helpful in personal development.

In another measure of leadership ability, students were asked to rate themselves (compared with the average person their age) on this trait. Again, there was no pretest. Table 13 shows the results of this analysis (multiple R=.44) Significant input variables included sex and religious preference. Women ranked themselves low (beta=-.15), as did students who had no particular religious preference (beta=-.07). Blacks (beta=.08), students who had good high school grades (beta=.02), those whose fathers were well-educated (beta=.03), and those who attended highly selective schools (beta=.13) tended to rate themselves highly on leadership skills.

Several in-college activities predicted high rankings in leadership abilities, as expected. Students who were elected to student office (beta=.22), participated in intramurals (beta=.22), worked in political campaigns (beta=.09), or held part-time jobs on campus (beta=.09) were likely to rate themselves among the top 10% of the cohort. Students majoring in business (beta=.09), history/political science (beta=.06), or education (beta=.04) also tended to give themselves high ratings, as did those who were satisfied with their

Table 14
Predictors of Self-reported Changes in Tolerance (n = 1,419)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11
Gender: Female	1	.10	.10	10	10	10	10	10	10	10	09	09	09	09
Mother's education	2	.14	-.09	-10	-10	-09	-14	-14	-13	-13	-14	-14	-14	-14
No religious preference	3	.15	-.07	-07	-06	-06	-07	-07	-07	-06	-06	-06	-06	-06
Father's education	4	.17	-.01	-01	08	08	08	08	07	07	07	07	06	05
Race: Other	5	.17	.06	06	05	05	05	05	05	05	05	05	05	05
Elected to student government	6	.21	.12	12	12	12	12	12	12	12	12	11	11	10
Major: Math/Statistics	7	.22	-.08	-08	-08	-08	-08	-08	-08	-08	-08	-08	-08	-08
Major: Engineering	8	.25	-.09	-07	-08	-08	-07	-07	-07	-08	-08	-08	-08	-08
Major: Undecided	9	.24	-.07	-07	-07	-07	-06	-06	-06	-06	-06	-06	-06	-06
Swimming/Water Polo	10	.25	.05	05	06	06	05	06	06	06	06	06	06	06
Satisfaction: Opportunities to talk with professors	11	.27	.11	11	12	12	12	12	10	11	11	10	11	11
Variables not in the equation														
Football player			-.06	-03	-03	-02	-02	-02	-02	-02	-03	-03	-02	-03

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

opportunities to talk to professors (beta=.17). It makes sense that highly motivated, involved students are more likely to see themselves as leaders.

General athletic involvement (beta=.18) was a significant predictor of self-ranking on leadership ability, as were several other subsets of athletics: Athletes who were on scholarship (beta=.12), those who played revenue sports (beta=.12), those competing at the Division One level (beta=.11), and swimmers and water polo players (beta=.07). Four other athletic participation variables that did not enter the regression had significant simple correlations with leadership abilities: Black athletes (r=.19), big-time athletes (r=.17), football players (r=.10), and basketball players (r=.07).

It is clear that participation in intercollegiate athletics is associated not only with high self-ratings on leadership, but also with large self-reported improvements in leadership abilities. What, exactly, this association between self-perceived leadership abilities and athletic involvement means is not clear. Those critics who see a tendency in academia to equate athletic prowess with "leadership" might argue that college athletes have simply bought into a public relations gimmick, seeing themselves as "leaders" simply because they excel in athletics. On the other hand, coaching folklore would locate the source of these results in the leadership experiences encountered every day in practice sessions and competitive athletic events. To an athlete, leadership involves communicating with teammates, taking initiative, leading by positive example, encouraging others, and putting the group first.

Students were asked to rate themselves (compared with when they entered college as freshmen) on their tolerance of persons with different beliefs. Table 14 presents the regression results (multiple R=.27). Women (beta=.10)

and students whose fathers were highly educated (beta=.08) reported the largest increases in tolerance. Those whose mothers were highly educated (beta=-.14) and those who expressed no religious preference (beta=-.07) were unlikely to report positive changes.

Students who were elected to student government positions (beta=.12) reported above-average increases in tolerance of persons with different beliefs, which could be logically expected. On the other hand, students who majored in math (beta=-.08) or engineering (beta=-.07) or who were undecided about choosing a major (beta=-.06) were less likely to report heightened tolerance for others. Those who were satisfied with their opportunities to talk to professors (beta=.12) were apparently influenced by their professorial contacts to broaden their social perspective and be more tolerant of others. This is consistent with previous literature and the ideal that academe should promote an appreciation for diversity.

Interestingly, swimmers and water polo players (beta=.06) reported significant strengthening of their tolerance of persons with different beliefs. This was somewhat surprising, as swimming/water polo was the only athletic variable positively correlated with this outcome. It is also a sport where the players are nearly all white. Football players were not likely to report significant progress on this trait (r=-.06), perhaps alluding to a tendency to be isolated from the mainstream campus intellectual environment in their particular sports sub-environment. Playing football does not, however, enter the regression. Other athletes were comparable to their non-athletic peers in self-reported changes in tolerance. It should be noted that this multiple correlation coefficient (R=.27) is of very modest size. Since the process by

which a person becomes more tolerant of others is likely to involve a complex web of interactions with both people and ideas, it may be very difficult to predict.

A more definitive test of outcomes in this area was carried out using longitudinal data: Students were asked in 1984 and again in 1988 to indicate the personal importance of helping to promote racial understanding. The results of this regression analysis are presented in Table 15 (multiple R=.53). The pretest accounted for a large proportion of the variance, as expected (beta=.44). Whites (beta=-.11) were less likely than non-whites to strengthen their interest in promoting racial understanding during college. As members of the dominant culture they may lack an awareness regarding problems which are perceived by other ethnic or racial groups. American Indians (beta=.06), students with good high school grades (beta=.05), and those attending private institutions (beta=.07) were more likely than others to strengthen their interest in promoting racial understanding while attending college. Majoring in humanities (beta=.09) and being satisfied with opportunities to talk with professors (beta=.04) were also positively related to changes in promoting racial understanding, as might be expected.

Students who majored in business (beta=-.12), engineering (beta=-.07), math (beta=-.04), or technical fields (beta=-.04) were less likely than students in other majors to increase their valuing of the importance of promoting racial understanding. This appears to be an environmental effect, denoting causal relationship, as there were pretest controls. The point is that majoring in these fields seems to diminish students' commitment to promoting racial understanding. These fields lived up to their stereotypes of conservatism and

Table 15

Predictors of Student Values: The Importance of Promoting Racial Understanding (n = 1,371)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13
Importance of promoting racial understanding (pretest)	1	.48	.47	47	44	44	44	44	43	43	42	42	42	41	42	41
Race: White	2	.48	-.20	-11	-11	-12	-11	-11	-12	-12	-12	-12	-12	-12	-12	-12
High School GPA	3	.49	.05	05	06	06	06	05	04	04	04	04	04	05	05	04
Race: American Indian	4	.49	.07	06	05	06	06	06	05	05	05	06	06	06	06	06
Institution: Private	5	.49	.12	08	07	07	07	07	06	05	05	05	05	05	06	05
Major: Business	6	.51	-.15	-12	-13	-12	-12	-12	-12	-13	-12	-13	-13	-13	-13	-13
Major: Engineering	7	.51	-.10	-07	-07	-07	-07	-07	-09	-09	-08	-09	-09	-09	-09	-09
Major: Humanities	8	.52	.13	08	09	09	09	09	08	07	07	07	07	07	07	07
Major: Other technical field	9	.52	-.05	-03	-04	-04	-04	-04	-05	-06	-06	-06	-06	-06	-06	-06
Fraternity/Sorority	10	.52	-.05	-05	-05	-05	-05	-06	-05	-05	-05	-05	-05	-05	-05	-05
Major: Math/Statistics	11	.53	-.06	-04	-04	-04	-04	-04	-05	-05	-05	-05	-05	-05	-05	-06
Revenue sport athlete	12	.53	-.04	-06	-06	-06	-05	-06	-06	-06	-05	-06	-05	-06	-06	-06
Satisfaction: Opportunities to talk with professors	13	.53	.09	06	06	06	06	04	04	04	04	04	04	04	05	05
Variables not in the equation																
Black athlete			.13	04	01	01	02	00	00	00	01	00	01	01	03	02

$p < .05$

Note: Decimals have been omitted.

Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

lack of interest in social issues. In addition, being a member of a social fraternity or sorority (beta=-.06) seems to weaken students' commitment to promoting racial understanding. These results confirm the stereotype of Greek organizations as being somewhat unconcerned with social change. Membership in these organizations seems to diminish this social value. Because change was measured from pretest to posttest, there is a stronger basis for arguing that this is a causal relationship.

Participation in revenue sports (beta=-.06) also tends to decrease students' commitment to promoting racial understanding, although the reasons for this result are difficult to decipher. Revenue sport athletes may simply be caught up in the glamour, money, status and media attention associated with big-time college athletics. Participation in revenue sports may promote narcissism and selfishness, diminishing social concerns. At face value these results point to a potential "down side" of athletic participation. Even though athletes play and work together in a racially diverse environment, the experience does not seem to enhance their commitment to promoting racial understanding. Generally, there were no direct effects of any of the other athletic variables on this outcome, except, as expected, for black athletes (r=.13) who are keenly aware of the importance of this issue (probably from personal experiences outside of athletics). Black athletes are more committed than other students are to promoting racial understanding, but this simple relationship seems to be attributable entirely to their race rather than to their involvement in athletics (see steps 1 and 2). Further, being a black athlete does not seem to enhance these values during college (since this interaction term did not enter the regression).

There are other angles to be considered in interpreting the negative effects of being a revenue sport athlete on valuing the promotion of racial understanding. Perhaps these students, who probably have more interracial interactions than do most other students, do not develop a sense the importance of improving society in this area, because they come to take their interracial experiences for granted. Their day-to-day experiences in a racially mixed environment may thus cause them to think that promoting racial understanding is no longer a critical societal need. On the other hand, interracial interactions among revenue sport athletes may actually serve to exacerbate racial tensions. Competitive stresses may release pent-up animosities, reinforcing previously held negative attitudes and expectations.

Career Maturity

Another area of personal development which has been linked negatively to athletic involvement concerns an individual's realistic assessment of future career options. Some have charged that schools use athletes, fail to provide them proper counseling and guidance about their futures, and then dump them back into society. This set of outcome variables will be used to explore factors relevant to student maturity in preparing for a career after college.

The athletes in this survey were asked to react to the statement, "As an athlete, I feel "used" by my school and coach." Of those who responded (n=723) only 4% (n=28) agreed strongly; and another 11% (n=77) agreed somewhat. The remaining 85% generally disagreed with the statement; 21% (n=155) disagreed somewhat, while 64% (n=463) disagreed strongly. Clearly the majority did not feel used as athletes. However, there were marked differences

between black and white athletes on this item (chi square significance, p<.04). Fifteen percent of white athletes (n=96) agreed somewhat or strongly that they had been "used", compared to 24% (n=8) of black athletes. Although the sample size was small, this finding backs up the prevalent notion that black athletes are taken advantage of more often than other college athletes. However, just what the athletes mean by the term "used" is not entirely clear. Further research on this issue clearly seems to be indicated.

Students were asked whether they received career or vocational counseling in college. Table 16 shows variables which predicted this outcome (R=.26). Students who had good high school grades (beta=.07), who attended four-year colleges (beta=.12), who attended traditionally black institutions (beta=.07), or who attended highly selective institutions (beta=.13) were the most likely to report that they had received career or vocational counseling. Students who participated in intramurals (beta=.10), were elected to student government (beta=.09), or worked part-time on campus (beta=.08) were also more likely than other students to receive career counseling, as were those majoring in business (beta=.07) and fine arts (beta=.05). Students who were highly satisfied with their professorial interactions (beta=.09) were likely to have received career counseling. These results support the idea that those who are highly involved in campus life may be more knowledgeable about student services in general, may be more assertive in pursuing these opportunities, and may therefore be well-connected to other parts of campus.

Four athletic participation variables which were not in the equation had significant simple correlations with the outcome. General athletic involvement (r=.10) and being a black athlete (r=.08) were positively related to receiving

Table 16
Predictors of Who Received Career Counseling (n = 1,418)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10
High School GPA	1	.09	.09	09	11	06	07	07	07	06	07	07	06
Institution: 4-year college	2	.14	.09	10	10	12	12	11	10	10	11	11	09
Institution: Highly selective	3	.17	.12	09	11	11	13	11	10	11	12	12	11
Traditionally Black Institution	4	.18	.03	05	04	07	07	07	07	07	07	07	07
Intramural sports	5	.21	.11	12	11	10	10	10	09	09	08	08	07
Part-time job on campus	6	.22	.11	10	09	08	08	08	08	07	07	07	07
Elected to student government	7	.23	.09	08	08	08	09	08	07	07	07	07	06
Major: Business	8	.24	.03	04	04	07	07	06	06	06	06	07	07
Major: Fine arts	9	.25	.06	06	06	06	05	06	05	05	06	06	06
Satisfaction: Opportunities to talk with professors	10	.26	.14	13	11	09	09	08	07	07	07	07	07
Variables not in the equation													
Intercollegiate athlete			.10	10	09	07	06	03	03	03	03	03	03
Scholarship athlete			-.06	-05	-05	-04	-04	-06	-05	-05	-05	-05	-05
Black athlete			.08	09	08	06	05	02	01	01	01	01	01
Big-time athlete			-.05	-05	-04	-04	-04	-06	-05	-05	-05	-05	-05

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

career counseling. This tends to confirm the notion that involvement in campus life produces attendant spin-off effects which would otherwise appear to be unrelated. Since athletes are involved in their schools, they tend to be connected to a wide range of services. However, students who received an athletic scholarship (r=-06) and those who were big-time athletes (r=-.05) were somewhat less likely to report that they received such counsel. This is somewhat surprising, since the large battery of support services typically associated with bigtime college athletics is usually thought to include career guidance and counseling. Perhaps big-time athletes are so involved in their academic and sporting activities that other important pursuits tend to be neglected.

On a related item, students were asked to rate their satisfaction with the career counseling and advising services on their campuses. Table 17 presents the regression results on this outcome. Being Catholic (beta=.08), having good high school grades (beta=.03), attending a four-year college (beta=.10), attending a traditionally black institution (beta=.07), or attending a highly selective institution (beta=.13) were each predictors of student satisfaction with career counseling. Students who participated in intramural sports (beta=.14), who were elected to student government office (beta=.08), or who majored in business (beta=.08) were also relatively well satisfied with these services. That students who were satisfied with their professorial interactions also tended to be satisfied with career counseling services (beta=.23) suggests a possible connection between the two: Professors may be providing general career counsel to those students who take the trouble to seek them out.

Athletes who played revenue sports were likely to be well satisfied with career counseling and advising services on their campuses (beta=.07). This

Table 17
Predictors of Satisfaction With Career Counseling (n = 1,419)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10
Catholic	1	.07	.07	07	07	07	08	08	08	08	08	08	08
High School GPA	2	.10	.06	06	06	08	03	03	05	04	05	05	03
Institution: 4-year college	3	.13	.08	08	09	09	11	10	09	09	09	09	04
Institution: Highly selective	4	.17	.10	11	10	11	11	13	11	11	12	13	10
Traditionally Black Institution	5	.18	.04	04	05	05	07	07	08	08	08	08	07
Intramural sports	6	.23	.16	16	16	15	14	14	14	13	13	12	10
Elected to student government	7	.24	.08	08	08	07	08	08	06	06	07	07	05
Major: Business	8	.25	.04	04	05	05	08	08	06	06	06	06	06
Revenue sport athlete	9	.25	.08	08	08	07	07	07	05	06	05	05	04
Satisfaction: Opportunities to talk with professors	10	.32	.25	25	25	24	23	23	21	21	21	21	21
Variables not in the equation													
Intercollegiate athlete			.12	12	12	12	09	09	05	05	05	04	02
Division I Athlete			.04	04	04	06	04	04	02	02	02	02	01
Football player			.07	07	07	07	06	06	04	04	04	01	02
Black athlete			.12	12	13	12	11	09	05	05	05	04	03
Big-time athlete			.05	05	05	06	06	05	04	04	04	01	01

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

result was expected, in light of the typical support services programs available to athletes at most colleges and universities. It is also not surprising to find that five other athletic involvement variables were positively correlated with the outcome: general athletic participation (r=.12), competing at the Division One level (r=.04), playing football (r=.07), being a black athlete (r=.12), and being a big-time athlete (r=.05). These variables, however, did not enter the regression equation.

Since persistent media stereotypes have portrayed college athletes as unrealistically oriented toward professional careers, athletes in this study were surveyed regarding their personal outlooks toward having a professional sports career. Two separate questions were asked, with the aim of distinguishing between an individual's desire to play pro sports and that person's probability of actually doing so (whether or not it was a realistic option). Student-athletes were asked to agree or disagree with the statement, "I have a very strong desire to play professional sports." Of the respondents to this item (n=734), only 6% (n=45) agreed strongly with the statement; another 13% (n=99) agreed somewhat. Thus a total of only 19% had any desire to play pro sports. Eighteen percent (n=131) disagreed somewhat with the statement; and an overwhelming 62% (n=458) disagreed strongly. Over 80% of the athletes who responded had no strong desire to go pro.

Similarly, athletes were asked to agree or disagree with the statement, "I have a very good chance to actually have a career as a professional athlete." Of those who responded (n=726), only 1% (n=8) agreed strongly with this proposition; and another 4% (n=32) agreed somewhat. Thus only 5% agreed at all with the statement. Conversely, 14% (n=105) disagreed somewhat, while

80% (n=581) disagreed strongly. Thus, a total of over 94% of these athletes were quite realistic about their limited pro prospects. Fifteen percent of big-time athletes, 12% of scholarship athletes, 8% of Division One athletes, and only 6% of revenue sport athletes in this study thought that they had a good chance of having a career in professional sports. Although not totally realistic, these results diverge greatly from other reported research where 28% of Division One athletes (Blann, 1985), 48% of scholarship athletes in revenue sports (Kennedy & Dimick, 1987), and 62% (Paul, 1986) of Division One revenue sport athletes (Paul, 1986) expected to have professional careers. These major variations may be due to the small numbers of institutions sampled in other studies, wherein institution-specific results were magnified. The three studies cited used data from a total of six institutions; the present study used data from a national sample of 294 institutions.

Interestingly, there were significant differences between revenue sport participants and other athletes, regarding the desire to go pro. But, the differences were in the opposite direction of what was expected! Both revenue and big-time athletes were less likely to report a strong desire to play professional sports. Regarding the probability of going pro, there was a tendency toward unreality among big-time athletes and scholarship athletes; 15% of big-time athletes and 12% of scholarship athletes thought they had a "good chance" of playing professional sports, as well as 8% of Division One athletes; 9% of black athletes; 7% of football players; and 4% of basektball players. These compare with the reality that only 1-2% of college athletes actually do play professional sports.

Academic Outcomes

Many people believe that college athletes in general receive poor grades compared to their peers. Are athletes typically less well-prepared than other students upon entry to college? How do they actually perform academically, compared to their peers? Are there differences between athletes and non-athletes in retention rates? And finally, are there differences among athletes who participate in particular sports? These questions were explored through regression analysis, and will be discussed in this section.

Table 18 presents the results of the regression analysis on college grade point average (multiple R=.55). As expected, high school grade point average (beta=.48) was by far the strongest predictor. White students (beta=.10), women (beta=.07), and those whose fathers had a high level of education (beta=.08) were the most likely to have college grades that exceeded what would be expected from their high school performances. Students who attended private institutions (beta=.06) or men's colleges (beta=.05) received higher-than-expected grades, whereas those attending highly selective institutions (beta=-.08) tended to have lower-than-expected grades. This latter finding no doubt reflects the more rigorous academic standards of selective institutions (Astin, 1977).

Engineering majors (beta=-.10), business majors (beta=-.04), and those who participated in intramurals (beta=-.08) received lower-than-expected grades, in contrast with those who were elected to student government positions, who performed better than expected (beta=.07). Not surprisingly, the number of hours per week a student spent studying predicted college GPA (beta=.14), as did student satisfaction with opportunities to talk with professors (beta=.08).

Table 18

Predictors of Undergraduate Grade Point Average (n = 1,414)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11	12	13	14
High School GPA	1	.47	.47	47	46	46	45	47	48	48	48	48	47	47	47	45	44
Race: White	2	.48	.13	09	09	10	09	09	10	10	10	10	10	10	10	10	10
Gender: Female	3	.48	.11	07	08	08	08	07	07	07	05	05	04	04	03	02	02
Father's education	4	.49	.12	07	06	06	06	08	08	08	07	07	07	07	07	07	06
Institution: Highly selective	5	.49	.15	-05	-05	-04	-07	-07	-08	-08	-06	-06	-05	-06	-06	-08	-08
Institution: Private	6	.50	.08	04	05	05	04	06	06	06	05	04	05	05	06	06	04
Institution: Men's college	7	.50	.02	04	05	05	05	05	05	05	05	05	05	05	05	05	05
Major: Engineering	8	.51	-.07	-13	-12	-11	-11	-11	-10	-10	-10	-10	-10	-11	-11	-12	-13
Elected to student government	9	.51	.10	08	08	08	08	08	08	07	08	08	08	08	08	07	07
Intramural sports	10	.52	-.10	-08	-09	-07	-08	-07	-07	-08	-07	-08	-08	-08	-07	-08	-08
Major: Business	11	.52	-.12	-04	-03	-03	-03	-04	-05	-04	-06	-06	-05	-05	-05	-05	-04
Revenue sport athlete	12	.52	-.07	-06	-06	-05	-05	-05	-06	-06	-06	-06	-05	-05	-05	-04	-05
Hours/week: Studying	13	.54	.23	13	13	13	13	14	14	14	15	15	15	15	14	14	14
Satisfaction: Opportunities to talk with professors	14	.55	.15	09	09	09	09	09	08	08	09	08	09	09	09	08	08
Variables not in the equation																	
Scholarship athlete			-.03	-03	-03	-03	-02	-03	-03	-03	-03	-03	-02	-02	-01	-01	-00
Football player			-.07	-06	-06	-04	-04	-04	-05	-05	-05	-05	-04	-04	-01	-02	-01
Black athlete			-.08	-05	-03	-03	-03	-02	-03	-03	-03	-03	-00	-00	01	00	-00
Big-time athlete			-.09	-07	-07	-06	-06	-06	-06	-06	-06	-06	-05	-04	-02	-02	-02

$p < .05$

Note: Decimals have been omitted.

Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

Of the athletic variables tested, participating in a revenue sport (beta=-.06) appeared to have a negative effect on college grades. None of the other athletic categories entered the regression equation. However, four were significantly correlated with the dependent variable, college grade point average, all in the negative direction. Scholarship athletes (r=-.03), football players (r=-.07), black athletes (r=-.08) and big-time athletes (r=-.09) all got lower-than-average grade point averages. There are several reasons why these variables did not enter. The effects of high school GPA, which entered at step 1, reduced the betas for three of these variables. For football, the coefficient was also reduced at step 3, when sex entered. However, the biggest effects for all four variables occurred at step 10, when intramural sports entered, and again at step 12, when revenue sports entered. Thus these four variables had no direct effects; rather, their simple correlations were accounted for by the entrance of high school GPA, intramural sports, and revenue sports. One of the reasons why the scholarship athletes, football players, black athletes, and big-time athletes get lower grades (which they do) is because they have poorer preparation from high school. It is a well-known fact that these athletes are often admitted to college with lower academic requirements than other students. So, it is no wonder that they do not do as well academically.

These results, though quite modest, suggest that there may be some academic problems among athletes in certain sub-environments, associated with big-time college sports. On the other hand, athletes in general, Division One athletes, swimmers, and basketball players were statistically no different than their peers on this outcome.

Retention and graduation rates are always of interest in studying higher education. Table 19 (multiple R=.49) presents the results of the regression predicting which students received bachelor's degrees from their freshman institution within four years after entry. Students who had good high school (beta=.22) or college (beta=.14) grades or whose fathers were highly educated (beta=.10) were the most likely to graduate within four years, as were those attending private (beta=.15) or highly selective (beta=.18) institutions. Students who worked part-time off-campus (beta=-.11) were not likely to complete their degree in four years. On the other hand, students who participated in intramural sports activities (beta=.06) or who were satisfied with their professorial interactions (beta=.21) were more likely to finish in four years.

Being a scholarship athlete (beta=-.07) appears to reduce the student's chances of completing a bachelor's degree within four years. This is probably a causal relationship and is not surprising: Multiple priorities and time conflicts pull these particular students in many different directions. Athletic participation in general (including the other sub-categories of athletes examined) was not a significant predictor, in either direction, of a student's likelihood of completing the bachelor's degree within four years. However, three other athletic variables had significant simple correlations with retention. General athletic participation (r=.09) and competing in Division One (r=.05) were positively associated with achieving the bachelor's degree within four years, while being a big-time athlete (r=-.06) had a negative correlation with finishing within that time frame. The reason that the big-time athlete variable did not enter the regression is because at step 10 the scholarship athlete variable entered and wiped it out (the beta went

Table 19
Predictors of Graduation Within Four Years (n = 905)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7	8	9	10	11
High School GPA	1	.30	.30	30	28	22	22	22	15	14	14	14	14	13
Father's education	2	.33	.17	15	15	09	10	10	09	08	09	08	08	08
Institution: Highly selective	3	.37	.30	23	20	20	17	18	19	17	18	17	16	16
Institution: Private	4	.40	.20	18	18	15	15	15	14	15	14	14	14	11
Traditionally Black Institution	5	.41	.02	04	05	08	07	07	07	06	07	07	07	07
College grades	6	.43	.25	14	14	16	14	14	14	15	15	16	15	13
Part-time job off campus	7	.44	-.17	-13	-12	-10	-11	-11	-12	-12	-12	-11	-11	-09
Major: Other non-technical field	8	.45	.06	06	06	07	07	07	06	07	07	07	07	07
Intramural sports	9	.45	.09	10	09	06	06	06	07	06	06	06	07	05
Scholarship athlete	10	.46	-.10	-08	-07	-05	-06	-07	-06	-06	-06	-07	-07	-07
Satisfaction: Opportunities to talk with professors	11	.49	.27	25	24	24	22	21	21	19	19	19	19	19
Variables not in the equation														
Intercollegiate athlete			.09	10	09	06	04	03	04	03	03	01	04	03
Division I Athlete			.05	06	04	01	02	02	03	03	03	02	05	07
Big-time athlete			-.06	-05	-04	-05	-05	-05	-04	-05	-05	-05	-00	-00

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

from -.05 to 00 at this step). So, the effects of big-time athletics are really explained in terms of scholarship athletes.

A related, but less restrictive measure of persistence was also tested in this inquiry. Table 20 (multiple R=.25) gives the results of the regression on student retention. The small R indicates that this is a less-easily predictable outcome (fewer variables entered, even though the "n" was larger than the n in Table 19). Retention was defined here to include students who either 1) have received the bachelor's degree after four years, or 2) are still enrolled in college full-time. There are alot of competing factors which influence this outcome. Consistent with the literature, father's educational level (beta=.13), high school grades (beta=.12), and attending a traditionally Black institution (beta=.07) are positively related to retention. Similarly, college grade point average (beta=.12), hours per week spent studying (beta=.11) and having a part-time job on campus (beta=.08) were related to persistence, as expected. Division One athletes (beta=.05) were also likely to persist. This result may reflect the special attention and support services provided to athletes competing at this level. Sixty-four percent of the sample had finished their bachelor's degree or were still enrolled after four years. A slightly better (but not statistically significant) rate was found for revenue sport athletes, as 66% of the basketball players and 67% of the football players were counted as persisters by this definition.

However, the variables not entering section shows two other athletic variables which were significantly correlated with retention. Being a scholarship athlete (r=-.05) and/or playing a revenue sport (r=-.06) in big-time athletics were both negatively related to retention. Media attention, academic support services, and institutional pressures (relating to graduation rates) may

Table 20
Predictors of Retention (n = 1,071)

Name	Step	Multiple R	Simple r	Beta at Step 1	2	3	4	5	6	7
Father's education	1	.14	.14	14	13	13	13	13	12	12
High School GPA	2	.18	.12	11	11	12	07	06	06	05
Traditionally Black Institution	3	.19	.05	06	07	07	07	07	07	07
College grades	4	.22	.15	14	12	12	12	11	11	10
Part-time job on campus	5	.23	.09	09	08	08	07	07	07	07
Division I Athlete	6	.24	.07	05	05	05	06	06	06	06
Hours/week: Studying	7	.25	.14	13	11	11	10	10	10	10
Variables not in the equation										
Scholarship athlete			-.05	-04	-03	-03	-03	-03	-05	-05
Revenue sport athlete			-.06	-05	-05	-05	-05	-05	-06	-05

$p < .05$
Note: Decimals have been omitted.
Source: 1988 Follow-up Survey of 1984 freshman cohort, Cooperative Institutional Research Program.

influence both attitudes and outcomes by indoctrinating athletes in revenue sports regarding the importance of persisting towards a degree. In this context it was not surprising to find that Division One athletes were actually more likely to persist than other students.

Crosstabulations were performed to further explore academic outcomes. Chi square analysis revealed that there were no significant differences between athletes and non-athletes in hours-per-week spent studying, attending classes or labs; or in the numbers reporting that they had failed a course. There were differences, however, in other areas. For example, athletes reported more contact with faculty outside of class; were more likely to work with a professor on a research project; were more likely to work on an individual research project; were more likely to take reading or study skills courses (though not "remedial" or "developmental" classes); and actually entered college with better overall high school grades than non-athletes.

Further, there were no significant differences between big-time or revenue sport athletes and other sports categories. There were only two athletic variables with significant negative relationships to academic outcomes. Football players had lower college grade point averages than other students; and revenue sport athletes spent less time per week studying than their peers. Surprisingly, 32% (49/151) of revenue sport athletes reported that they spend only five hours per week (or less) studying or doing homework! This compares to only 21% of the total sample. Both of these percentage figures are a cause for concern, since all respondents were supposed to be full-time college students. Twenty-four percent of non-athletes in this sample, 19% of athletes, and 16% of non-revenue

sport athletes reported that they spend only five hours per week (or less) studying or doing homework.

Summaries and interpretations of these findings are presented in the next chapter.

Chapter 5

Summary and Conclusions

The purpose of this study was to investigate the effects of intercollegiate athletic participation on the personal development of college students. Dependent variables for this four-year longitudinal study included a variety of cognitive and affective outcomes. Since the principal independent variable, "general athletic participation," was considered to be too simplistic to provide an in-depth analysis, analyses of several sub-environments of athletic involvement were made: participation by sport, competitive level, scholarship status, and revenue sport status. Special analyses were also conducted of black athletes and "big-time" athletes (students on scholarship playing revenue-producing sports at Division One institutions).

The samples employed for the study included 780 student-athletes and 757 non-athletes who were assessed as entering freshmen in 1984 and followed-up four years later in 1988. An input-environment-output (I-E-O) model and blocked stepwise multiple regression analyses were used to apply Astin's involvement theory to intercollegiate athletics, which was viewed as one form of involvement in college life. The concept of involvement explains many of the positive outcomes attributed to athletic participation, which may result from the strong connections, identification, and affective bonding of athletes to their schools. If the theory can be directly applied to college athletics, then "athletic involvement" in general would contribute to the personal growth and development of student participants. However, there are several distinct

variations in college athletic environment experiences which need to be sorted out. Not all athletic environments produce the theorized positive outcomes.

Major Findings

The one athletic participation variable which entered the most regressions and which seemed to carry the largest regression coefficients was not one of the intercollegiate measures but was, rather, participation in intramural sports. Consistent with the theory of involvement, participation in intramural sports appears to have a positive effect on student retention, degree aspirations, and satisfaction with the college experience. There is also suggestive evidence indicating that intramural participation may encourage the development of leadership skills, enhance the student's drive to achieve, and reduce the frequency of emotional problems. The downside of intramural athletic participation is that it appears to have a negative impact on the student's college grade point average and is positively associated with academic cheating behavior.

In most regressions several of the intercollegiate athletic participation measures had significant simple correlations with the dependent variables, but in many instances these correlations were reduced to non-significance when intramural participation entered the regression equation. The problem here is that there is a substantial multicollinearity between intercollegiate and intramural athletic participation: fully 78% of the students participating in intercollegiate athletics also participate in intramural sports! Nevertheless, a number of the intercollegiate measures did enter some of the regression

equations, indicating that intercollegiate athletic involvement does affect student development over and above the effects of intramural participation.

From the perspective of its impact on students, college athletic participation is not uniformly rosy, nor is it an unmitigated disaster. It's a mixed blessing. Some of the coaching folklore that attributes beneficial educational outcomes to general athletic participation was confirmed: athletic involvement is positively associated with cooperative skills, competitiveness, leadership abilities and the drive to achieve, striking an even balance between task and relationship goals. These findings are consistent with the view that athletes are highly involved in their learning experiences, are given high expectations for quality, and receive regular assessment and feedback as they progress. Even though a number of entering freshman characteristics were controlled in these analyses, these results must be considered tentative, due to the lack of pretest controls. Further research using pretest controls will be required to confirm these findings.

The results also point to some problem areas in big-time college sports. As hypothesized, revenue sport participation was particularly associated with academic dishonesty and increased materialism. College athletic participation in general, and especially the revenue sport of football, seem to be uniquely associated with cheating. Since most big-time athletes are men, we cannot be sure whether this is an interaction between gender and participation in revenue sports, or whether it is just a main effect of revenue sports. But the fact is that participation in intercollegiate athletics, and especially in football, produced more cheating than other categories. Thirty-one percent of football players, 30% of big-time athletes, 22% of revenue sport athletes, and 22% of scholarship

athletes reported that they cheated occasionally on exams or quizzes. These figures compare with 15% of the entire sample who reported cheating.

As hypothesized, student materialism seems to be increased by participation in revenue sports. The materialism effect, in particular, can be accepted with high confidence for two reasons. First, there was a pretest, so actual longitudinal change is being measured. Secondly, intramural sports participation did not enter, nor did it have a significant simple correlation with materialism. Intramural participation would not be expected to be related to materialism, whereas it was hypothesized that participation in revenue sports would encourage materialistic values.

Another consequence of participation in revenue sports is a negative effect on the life goal of "promoting racial understanding." This result was somewhat surprising, given the considerable amount of interracial contact that occurs in most sports, and especially in the revenue sports of football and basketball. This may reflect a decreased awareness of social problems; or, it may indicate that the regular experience of interracial interaction that occurs on most college teams reduces the players' sense of urgency and importance concerning the promotion of racial understanding; or, alternatively, it may mean that interracial tensions are actually exacerbated by competitive stresses.

The final negative consequence of participation in revenue sports was a negative impact on the student's grade point average in college. Athletes of all stripes appear to get lower grades in college than non-athletes do, but the effects seem to be attributable entirely to two factors: participation in intramural sports and participation in revenue-producing sports. Once these factors are

controlled, no other athletic participation variable seems to be related to college grades.

Student-athletes are highly competitive and possess a strong drive to achieve, but are academically less-well prepared at entry to college. An overemphasis on sports activities may interfere with the ability of athletes to devote sufficient time and energy to academic pursuits. Their stressful environment is a physically and emotionally exhausting routine which includes conflicting time demands. The system seems to encourage excess. During the season, for example, a football player is preoccupied with practices and games. When the season is over, instead of concentrating on his studies, he often plays intramural sports to "stay in shape" and maintain his athletic prowess. Thus encouraged by coaches, his whole life revolves around (or is dominated by) athletic participation. This environment creates dilemmas over priorities and may explain why athletes in general, compared to non-athletes, get worse grades and are more likely to cheat. Academic dishonesty is thus taken as the easy way out of the academic pressures created by their preoccupation with sports.

Possibly what is happening here is that truly dedicated athletes are simply using college like a gym class. Characterized by a "jock" mentality, they are not seriously concerned about their studies: they are basically in college to be athletes. Consequently, they take every opportunity to play sports. Since they are not as dedicated to their studies, they find it expeditious, when it comes to taking exams or doing homework assignments, to cheat in order to survive academically.

Statistically, however, the magnitude of the effects of sports participation on academic outcomes was relatively small, indicating that a proper,

manageable balance between academics and sports seems to be the rule. Revenue sport participation, however, was the exception. These athletes had lower grade point averages than other students. Scholarship athletes were also prone to dropping out. Apparently there is a big difference in Division One schools between scholarship athletes (who are usually in revenue sports) and other athletes.

Athletic department support services seem adequate to assist student-athletes in coping emotionally with their multiple responsibilities, since hypothesized emotional difficulties did not seem to be a problem for them. In fact, the relationship between Division One athletic participation and emotional health was positive; and there was a negative relationship between general athletic participation and "feeling overwhelmed by all I have to do." Special services provided by athletic departments seem to have positive effects in nurturing and guiding student-athletes successfully through college.

These athletes demonstrated more career maturity than would be expected from previous studies. Although there was a definite tendency among big-time athletes to inflate their chances of having a professional career, most other athletes were quite realistic regarding their chances of a professional career. The reason for this discrepancy may be that this was a national study involving institutions of all types rather than a study of a single, Division I institution.

Generally speaking, the nine athletic participation variables seem to produce similar results and in many instances appear to be interchangeable. For example, playing football is a subset of playing a revenue sport, and both are part of the "big-time athlete" variable. Finally, all eight sub-categories are part

of the general athletic participation variable. In view of this overlap, it is not surprising that the coefficients were not all that different from one another. It is also important to note that the coefficients were almost all relatively small, whether positive or negative, most ranging around .10 or less. These small coefficients, of course, are no doubt in part attributable to the low reliability of some of the dependent variables.

Policy Implications

This study has increased our understanding of issues and relationships related to intercollegiate athletic participation and college student psychosocial development, providing preliminary answers to some questions and leaving others unsettled. This national, multi-institutional, longitudinal study has demonstrated the scope and limits of positive educational values attributed to student participation in intercollegiate college sports in four-year institutions. Favorable results in some areas provide support for the claim that athletics can contribute positively to educational goals and student development. Since these beneficial effects accrue to student-athletes in general, but not as often to scholarship athletes who play revenue sports (especially football players), there are important implications for reforming college athletics at higher levels of competition. In some areas big-time college sports, as currently run, mitigate the positive educational and personal benefits that other student-athletes enjoy. In these instances the traditional educational and developmental values of higher education need to be given greater emphasis, and the influence of commercial, professional, and entertainment values need to be downplayed.

While athletic involvement by college students appears to have several positive influences on psychosocial development, there are drawbacks. When overemphasized, sports activities can dominate the time, energy, and focus of student-athletes in a way that hinders their roles as students, causing them to be isolated from the mainstream college environment. It would appear that administrators who oversee athletic programs need to put greater emphasis on the primacy of the student role, particularly for big-time athletes. A specific code of ethics with clear guidelines should be established, clarifying discrepancies between the formally stated institutional values and the implied "win-at-all-costs" (and make money) criteria for judging success. In addressing the issue of time as a finite resource, allotments for athletic activity and academic pursuits need to be better balanced, particularly in revenue sports. Specifically, in-season regulation of practice times and adherence to required study sessions are recommended, in order to control and balance these competing time commitments. The developmental values of higher education should also be incorporated formally into coaches' contracts and athletic program evaluations.

Ideally, reform should be conducted at the level of individual institutions, whose leaders would monitor their own athletic programs. Unfortunately, this approach has not proven to be effective in the past. A national consensus is needed among college presidents, athletic directors, and coaches to put college athletics in perspective, and to align them more closely with the educational mission of these institutions. The empirical evidence yielded in this study should inform such discussions, clarifying future directions for college athletics.

Limitations

This study was based on self-reported information, the accuracy of which cannot be fully verified. However, self-reports (both positive and negative) have been found to be generally reliable over time, particularly where anonymity is guaranteed. The sample is also limited to one particular college cohort (the entering class of fall 1984). Since a non-experimental design was used and the data are correlational, it should be acknowledged that there is inevitably some risk in drawing causal inferences from the results.

Independent (control) variables were selected on the basis of theory and previous research findings, in order to take into account pre-existing differences between freshman athletes and non-athletes. The major purpose of controlling inputs is to rule out as many plausible alternative causes as possible. This is especially true in the case of those independent variables for which no pretest was available. However, since all potentially biasing influences can never be completely controlled, it must be acknowledged that any conclusions about the possible effects of athletic participation must be tempered with a recognition of the possibility that the results might be different if some other input variables were to be controlled.

Another limitation is the 26% response rate to the longitudinal follow-up survey. While non-response bias can substantially affect the marginal distributions of variables, the effects on relationships among variables are generally quite small (Astin, 1968).

Further Research

The sample used in this study was limited to four-year colleges and universities and overrepresented highly selective institutions. Only two types of institutional athletic participation were compared (Division I versus all others). Ideally all other competitive categories of institutions would be studied systematically (i.e., Division II, III, and NAIA). Two-year schools, which were excluded from this analysis, should be examined. Finally, there may be important differences between other individual sports or classifications of sports which could be differentiated in a larger, more detailed sample.

An important methodological issue for future research to consider is how to separate the effects of athletic involvement and intramural participation, since they both are forms of student involvement which affect student development. In the current study there was substantial confounding of intramural and intercollegiate athletic participation. While it was possible to attain a partial separation of these two variables, in future research it would probably be useful to obtain larger samples of students so that the effects of intercollegiate and intramural participation could be more clearly separated, and so that the possible interaction effects between the two forms of participation could be studied.

Of course, there is an endless list of possible additional dependent variables to explore in relation to athletic involvement. Most important is to extend the study beyond the four-year time span: What are the longer-term impacts of athletic participation? How are students' careers and personal lives affected?

Finally, it would be interesting to explore current theories about endorphins in this context: Are there general emotional benefits to be derived from physical activity? Does intramural sports participation have the same effects as intercollegiate athletic involvement? Or, are there added benefits in the intercollegiate athletic environment?

References

American College Testing Program and Educational Testing Service (1984). Athletics and academics in the freshman year. Washington, D.C.: American Association of Collegiate Registrars and Admissions Officers (AACRAO) and American Council on Education (ACE).

Archer, J., Probert, B., & Gage, L. (1987). College students' attitudes toward wellness. Journal of College Student Personnel, 28, 311-317.

Astin, A. W. (1968). The college environment. Washington, D.C.: American Council on Education.

Astin, A. W. (1970). The methodology of research on college impact, part one. Sociology of Education, 43, 223-254.

Astin, A. W. (1977). Four critical years. San Francisco: Jossey-Bass.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 25, 297-308.

Astin, A. W. (1985). Achieving educational excellence. San Francisco: Jossey-Bass.

Astin, A. W. (1987). Competition or cooperation? Teaching teamwork as a basic skill. Change, 19, 12-19.

Astin, A. W., Green, K. C., Korn, W. S. & Maier, M. J. (1984). The american freshman: National norms for fall 1984. Los Angeles: Higher Education Research Institute.

Astin, A. W., Green, K. C., & Korn, W. S. (1987). The american freshman: Twenty year trends. Los Angeles: Higher Education Research Institute.

Atwell, R. (1983). Keeping the amateur in athletics. Educational Record, 64, 16-17.

Ballantine, R. J. (1981). What research says: About the correlation between athletic participation and academic achievement. (ERIC Document Reproduction Service No. ED 233 994)

Blair, S. (1985). Professionalization of attitude towards play. Research Quarterly for Exercise and Sport, 56, 82-83.

Blann, F. W. (1985). Intercollegiate athletic competition and students' educational and career plans. Journal of College Student Personnel, 26, 115-118.

Bloom, B. S., Krathwohl, D. R., & Masia, B. B. (1956). Taxonomy of educational objectives: The classification of educational goals. New York: David McKay.

Boone, J. & Walker, H. (1987, February). Ungraduated college athletes: Stereotype and reality. Paper presented at the meeting of the Association for the Study of Higher Education, San Diego, California.

Bowen, H. R. (1977). Investment in learning: The individual and social value of american higher education. San Francisco: Jossey-Bass.

Boyd, W. B. (1980). A commentary on college athletics. College Board Review, 116, 26-28.

Bredemeier, B. & Shields, D. (1986). Moral growth among athletes and nonathletes: A comparative analysis. Journal of Genetic Psychology, 147, 7-18.

Brim, G. (1988, September). Losing and winning. Psychology Today, 48-52.

Brown, R. D. (1987). Editorial. Journal of College Student Personnel, 28, 291-292.

Bucher, C. & Dupee, R. (1965). Athletics in schools and colleges. New York: Center for Applied Research in Education, Inc.

Chartrand, J. & Lent, R. (1987). Sports counseling: Enhancing the development of the student-athlete. Journal of Counseling and Development, 66, 164-167.

Chickering, A. W. (1976). Developmental change as a major outcome. In M.T. Keeton and Associates, Experiential learning: Rationale, characteristics, and assessment. San Francisco: Jossey-Bass.

Chickering, A. W. & Associates (1981). The modern american college. San Francisco: Jossey-Bass.

Chu, D. & Griffey, D. (1985). The contact theory of racial integration: The case of sport. Sociology of Sport Journal, 2, 323-333.

Chu, D., Segrave, J., & Becker, B. (Eds.). (1985). Sports and higher education. Champaign, Illinois: Human Kinetics Publishers, Inc.

Coakley, J. J. (1978). Sport in society. St. Louis: C. V. Mosby.

Culbert, S. A. & McDonough, J. J. (1985). Radical management. New York: The Free Press.

Daniels, R. R. (1984, November). Emotional energy among college football players. (ERIC Document reproduction Service No. ED 246 015)

Davis, B. (1987). Beyond w's and l's: Evaluating intercollegiate athletic programs. New Directions for Institutional Research, 56, 37-47.

Davis, W. E. (1979). The president's role in athletics: Leader or figurehead. Educational Record, 60, 420-430.

Dickason, D. G. (1979). The future of collegiate athletics. Educational Record, 60, 499-509.

Early, K. (1984). Late blooming is better than no blooming at all. Journal of Developmental and Remedial Education, 7, 20-21.

Edwards, H. (1983). The exploitation of black athletes. AGB Reports, 25, 32-46.

Edwards, H. (1984). The black dumb jock: An american sports tragedy. The College Board Review, 131, 8-13.

Ervin, L. (1984). The right direction but short of the mark. College Board Review, 131, 15-19.

Farrell, C. S. (1984, November 21). Grades of freshman athletes are found the same as those of other students. Chronicle of Higher Education, 23.

Francois, D. (1979). Bibliography on collegiate athletics. Educational Record, 60, 518-534.

Gerdy, J. R. (1987). No more "dumb jocks." College Board Review, 143, 2-3, 40-41.

Greene, J. B. (1981, November). Blitzing athletic abuses. (ERIC Document Reproduction Service No. ED 203 949)

Handlin, O. & Handlin, M. (1970). The american college and american culture: Socialization as a function of higher education. The Carnegie Commission on Higher Education.

Hanford, G. H. (1979). Controversies in college sports. Educational Record, 60, 351-366.

Hanson, A. C. (1989). Academic dishonesty: The impact of student and institutional characteristics on cheating behavior. Unpublished doctoral dissertation, University of California, Los Angeles.

Hogan, J. C. (1978). Personological dynamics of leadership. Journal of Research in Personality, 12, 390-395.

Ibrahim, H. & Morrison, N. (1976). Self-actualization and self-concept among athletes. Research Quarterly, 47, 68- 79.

Janis, L. (1984). Annotated bibliography on minority women in athletics. (ERIC Document Reproduction Service No. ED 246 010)

Kennedy, S. & Dimick, K. (1987). Career maturity and professional sports expectations of college football and basketball players. Journal of College Student Personnel, 28, 293-297.

Kniker, C. (1974). The values of athletics in schools: A continuing debate. Phi Delta Kappan, 56, 116-120.

Kohn, A. (1986, September). How to succeed without even vying. Psychology Today, 22-28.

Krathwohl, D. R., Bloom, B.S., & Masia, B.B. (1964). Taxonomy of educational objectives-handbook II: Affective domain. New York: David McKay.

Landers, D. M. (1978). Socialization via interscholastic athletics: Its effects on educational attainment. Research Quarterly, 49, 475-483.

Layman, E. (1960). Contributions of exercise and sports to mental health and social adjustment. In W.R. Johnson (Ed.), Science and medicine of exercise and sports, (pp. 560ff). New York: Harper and Bros.

Lopiano, D. (1988, late winter). Speech presented at NCAA president's commission national forum. Physical Education, 45, 3-4.

Maltross, R. (1980). Student attitudes toward intercollegiate athletics. Journal of College Student Personnel, 21, 299-304.

Marmion, H. (1987). Athletics: Time is running out. AGB Reports, 29, 40-44.

McCurdy, J. (1983). UCLA counseling athletes on careers after their glory days are over. Chronicle of Higher Education, 27, 23-26.

McKristal, K. (Ed.). (1965). Foundations of physical activity. Champaign, Illinois: Stipes Publishing Company.

McLaughlin, B. (1986). Advising college athletes in the 1980's: A higher education abstracts review. NACADA Journal, 6, 31- 38.

Meggyesy, D. (1971). Football and education. In J. Scott (Ed.), The athletic revolution (pp. 50-64). New York: Free Press.

Michelson, H. (1980). Almost a famous person. New York: Harcourt Brace.

National Collegiate Athletic Association (1988). NCAA manual. Mission, Kansas: NCAA.

Naylor, N. (1983). Career planning for student athletes. AGB Reports, 25, 21-23, 26-29.

Nelson, E. S. (1983). How the myth of the dumb jock becomes fact: A developmental view for counselors. Counseling and Values, 27, 176-185.

Nyquist, E. B. (1982). The student athlete: Too little too late. The College Board Review, 124, 15, 28-29.

Oliva, L. (1987). Why save athletics? They have unique educational value. Soccer Journal, 32, 17-18.

Pace, C. R. (1984). Measuring the quality of college student experiences. Los Angeles: Higher Education Research Institute, Graduate School of Education, University of California, Los Angeles.

Paul, J. S. (1986). The intercollegiate athlete as a student in higher education: An analysis of career expectations, interests, and academic majors. Unpublished doctoral dissertation, University of Alabama.

Petitpas, A. & Champagne, D. (1988). Developmental programming for intercollegiate athletes. Journal of College Student Development, 29, 454-460.

Phelps, O. M. (1982). The student athlete: A proposal. The College Board Review, 124, 14, 27-28.

Porto, B. L. (1985). When coaches are teachers, athletes will be students. Liberal Edcuation, 70, 231-233.

Purdy, D. A. (1982). Are athletes also students? Social Problems, 29, 439-448.

Rao, V. V. & Loverman, S. J. (1984). Sex-role perceptions among black female athetes and non-athletes. Sex Roles, 11, 601-614.

Rees, C. R., & Segal, M. W. (1984). Role differentiation in groups: The relationship between instrumental and expressive leadership. Small Group Behavior, 15, 109-123.

Rhatigan, J. J. (1984). Serving two masters: The plight of the college student-athlete. NASPA Journal, 22, 42-47.

Ryan. F. J. (1989). Participation in intercollegiate athletics: Affective outcomes. Journal of College Student Development, 30, 122-128.

Sack, A. L., & Thiel, R. (1979). College football and social mobility: A case study of Notre Dame football players. Sociology of Education, 52, 60-66.

Sanford, N. (1962). The american college. New York: John Wiley and Sons.

Sanford, N., Borgstrom, K., & Lozoff, M. (1973). The role of athletics in student development. In J. Katz (Ed.), New Directions for Higher Education: Services for Students, No. 3. San Francisco: Jossey-Bass.

Savage, H. J. (1929). American college athletics. New York: Carnegie Foundation.

Savage, H., McGovern, J., & Bentley, H. (1931). Current developments in american college sport. New York: The Carnegie Foundation for the Advancement of Teaching.

Shapiro, B. J. (1984). Intercollegiate athletic participation and academic achievement: Sociology of Sport Journal, 1, 46-51.

Slavin, R. E. & Madden, N. A. (1979). School practices that improve race relations. American Educational Research Journal, 16, 169-180.

Sowa, C. J. & Gressard, C. F. (1983). Athletic participation: Its relationship to student development. Journal of College Student Personnel, 24, 236-239.

Spears, B. (1982). The transformation of women's collegiate sport. Phi Kappa Phi Journal, 62, 24-25.

Stevenson, C.L. (1975). Socialization effects of participation in sports: A critical review of the research. Research Quarterly, 46, 287-301.

Stone, J. A. & Strange, C. C. (1989). Quality of student experiences of freshman intercollegiate athletes. Journal of College Student Development, 30, 148-154.

Stuart, D. L. (1985). Academic preparation and subsequent performance of intercollegiate football players. Journal of College Student Personnel, 26, 124-129.

Study group on the conditions of excellence in american higher education (1984). Involvement in Learning. Washington, D.C.: National Institute of Education.

Thirer, J., Zackheim, M. A., & Summers, D. A. (1987). The influence of depression on selected motor performance tasks by college athletes and non-athletes. Educational and Psychological Research, 7, 75-89.

Uehling, B. S. (1983). Athletics and academe: Creative divorce or reconciliation? Educational Record, 64, 13- 17.

Underwood, J. (1983). Money madness. AGB Reports, 25, 34- 36.

Varca, P., Shaffer, G. & Sanders, V. (1984). A longitudinal investigation of sport participation and life satisfaction. Journal of Sport Psychology, 6, 440-447.

Wacker, J. (1983). Education and athletics: A coach speaks out. AGB Reports, 25, 30-33.

Willis, J. D. (1982). The relationship between competitive motives and ratings of competitiveness. (ERIC Document Reproduction Service No. ED 217 021).

Wittmer, J., Bostic, D., Phillips, T. D., & Waters, W. (1981). The personal, academic, and career problems of college student athletes: Some possible answers. Personnel and Guidance Journal, 60, 52-55.

Wooden, J. R. (1972). They call me coach. Waco, Texas: Word Books, Publisher.

Zingg P. J. (1982). What next for the student athlete? The Educational Forum, 46, 283-293.

Appendix A

Descriptive Statistics

Table A1
Descriptive Statistics (N = 641)

VARIABLE	MEAN	STD DEV	VALID N	LABEL
REASON11	2.598	.550	1520	REASON FOR COLL: MEET NEW PEOPLE
DEGASP84	4.993	.909	1348	HIGHEST DEGREE PLANNED ANYWHERE
DEGASP88	4.952	1.002	1440	HIGHEST DEGREE DESIRED (1988)
RACE1	1.915	.279	1537	RACE: WHITE
RACE2	1.042	.201	1537	RACE: BLACK
RACE3	1.005	.072	1537	RACE: AMERICAN INDIAN
RACE4	1.020	.138	1537	RACE: ASIAN
RACE5	1.010	.102	1537	RACE: CHICANO
RACE6	1.005	.072	1537	RACE: PUERTO RICAN
RACE7	1.008	.088	1537	RACE: OTHER
SEX88	1.402	.491	1536	STUDENT'S SEX (1988)
HSGPA	6.007	1.561	1529	AVERAGE HIGH SCHOOL GRADES
FATHEDUC	5.456	2.043	1517	FATHER'S EDUCATION
MOTHEDUC	4.842	1.803	1528	MOTHER'S EDUCATION
PROTESNT	1.396	.489	1537	RELIGIOUS PREFERENCE IS PROTESTANT
CATHOLIC	1.346	.476	1537	RELIGIOUS PREFERENCE IS CATHOLIC
JEWISH	1.047	.211	1537	RELIGIOUS PREFERENCE IS JEWISH
OTHERELG	1.040	.195	1537	RELIGIOUS PREFERENCE IS OTHER
NORELIG	1.112	.315	1537	NO RELIGIOUS PREFERENCE
UNIVERST	1.146	.353	1537	INSTITUTION IS A UNIVERSITY
FOURYEAR	1.854	.353	1537	FOUR YEAR INSTITUTION
INCOME	10.254	2.935	1404	ESTIMATED PARENTAL INCOME
NEWCONT	1.591	.492	1537	INSTITUTIONAL CONTROL (FROM STRAT)
NEWTYPE	1.608	.488	1537	INSTITUTIONAL TYPE (FROM STRAT)
NEWRACE	1.015	.121	1537	INSTITUTIONAL RACE (FROM STRAT)
MENSCOL	1.007	.080	1537	INSTITUTION IS A MENS COLLEGE
WOMENCOL	1.008	.092	1537	INSTITUTION IS A WOMENS COLLEGE
COEDINST	1.984	.127	1537	INSTITUTION IS COEDUCATIONAL
SELECT1	104.293	14.238	1537	INSTITUTIONAL SELECTIVITY SAT
MAJ8801	1.009	.095	1537	MAJOR GROUP: AGRICULTURE (1988)
MAJ8802	1.063	.243	1537	MAJOR GROUP: BIOL SCIENCES (1988)
MAJ8803	1.185	.388	1537	MAJOR GROUP: BUSINESS (1988)
MAJ8804	1.070	.255	1537	MAJOR GROUP: EDUCATION (1988)
MAJ8805	1.093	.291	1537	MAJOR GROUP: ENGINEERING (1988)
MAJ8806	1.042	.200	1537	MAJOR GROUP: ENGLISH (1988)
MAJ8807	1.044	.204	1537	MAJOR GROUP: HEALTH PROF (1988)
MAJ8808	1.088	.283	1537	MAJOR GROUP: HISTORY/POL SCI (1988)
MAJ8809	1.041	.198	1537	MAJOR GROUP: HUMANITIES (1988)
MAJ8810	1.030	.170	1537	MAJOR GROUP: FINE ARTS (1988)
MAJ8811	1.021	.143	1537	MAJOR GROUP: MATH OR STATS (1988)
MAJ8812	1.041	.198	1537	MAJOR GROUP: PHYSICAL SCI (1988)
MAJ8813	1.129	.335	1537	MAJOR GROUP: SOCIAL SCIENCES (1988)
MAJ8814	1.038	.191	1537	MAJOR GROUP: OTHER TECHNICAL (1988)
MAJ8815	1.067	.250	1537	MAJOR GROUP: OTHER NON-TECH (1988)
MAJ8816	1.005	.067	1537	MAJOR GROUP: UNDECIDED (1988)
MAJ8401	1.006	.076	1537	MAJOR GROUP: AGRICULTURE
MAJ8402	1.070	.255	1537	MAJOR GROUP: BIOLOGICAL SCIENCES
MAJ8403	1.170	.376	1537	MAJOR GROUP: BUSINESS
MAJ8404	1.046	.210	1537	MAJOR GROUP: EDUCATION
MAJ8405	1.128	.334	1537	MAJOR GROUP: ENGINEERING
MAJ8406	1.015	.121	1537	MAJOR GROUP: ENGLISH
MAJ8407	1.094	.291	1537	MAJOR GROUP: HEALTH PROFESSIONAL
MAJ8408	1.047	.213	1537	MAJOR GROUP: HISTORY/POLI SCIENCE
MAJ8409	1.021	.143	1537	MAJOR GROUP: HUMANITIES

MAJ8410	1.022	.147	1537	MAJOR GROUP: FINE ARTS
MAJ8411	1.022	.147	1537	MAJOR GROUP: MATHEMATICS/STATISTICS
MAJ8412	1.035	.184	1537	MAJOR GROUP: PHYSICAL SCIENCES
MAJ8413	1.051	.220	1537	MAJOR GROUP: SOCIAL SCIENCES
MAJ8414	1.060	.237	1537	MAJOR GROUP: OTHER TECHNICAL
MAJ8415	1.062	.242	1537	MAJOR GROUP: OTHER NON: TECHNICAL
MAJ8416	1.081	.272	1537	MAJOR GROUP: UNDECIDED
COLACT02	1.267	.442	1526	COLL ACT: MEMBER OF FRAT OR SOROR
COLACT04	1.298	.458	1521	COLL ACT: FAILED A COURSE OR CLASS
COLACT05	1.559	.497	1528	COLL ACT: JOB ON-CAMPUS
COLACT06	1.575	.495	1524	COLL ACT: JOB OFF-CAMPUS
COLACT11	1.240	.427	1522	COLL ACT: ELECTED TO STUDENT OFFICE
COLACT12	1.102	.303	1520	COLL ACT: WORKED IN POL CAMPAIGN
COLACT13	1.173	.378	1524	COLL ACT: TAKEN READNG/STUDY SKILLS
COLACT14	1.499	.500	1525	COLL ACT: HAD VOCATIONAL COUNSELING
COLACT15	1.174	.379	1521	COLL ACT: HAD PERSONAL COUNSELING
COLACT18	1.057	.233	1517	COLL ACT: TAKEN REMED/DEVEL CLASS
ACT8716	1.841	.795	1504	1987 ACT: IN INTRAMURAL SPORT
ACT8709	1.236	.554	1503	1987 ACT: SMOKED CIGARETTES
ACT8710	1.637	.594	1500	1987 ACT: BEEN LONELY OR HOMESICK
ACT8712	1.939	.530	1503	1987 ACT: FELT DEPRESSED
ACT8713	2.140	.622	1503	1987 ACT: FELT OVERWHELMED
ACT8715	1.301	.477	1501	1987 ACT: COPIED HOMEWORK
ACT8717	1.155	.375	1501	1987 ACT: CHEATED ON QUIZ OR EXAM
ACT8720	1.374	.587	1500	1987 ACT: FELT LIKE LEAVING COLLEGE
ACT8721	1.617	.571	1501	1987 ACT: LATE HOMEWORK
ACT8722	2.205	.721	1502	1987 ACT: DRANK BEER
ACT8723	2.053	.594	1501	1987 ACT: DRANK WINE OR LIQUOR
HPW8802	5.693	1.458	1509	HOURS/WEEK: STUDYING/DOING HOMEWORK
DEGBA	1.605	.489	983	RECEIVED BA DEGREE FROM FROSH INST
RETAIN1	1.848	.359	1161	
COLLGPA	4.136	1.048	1490	AVERAGE UNDERGRADUATE GRADES
COLOBJ12	2.263	.841	1486	COLL OBJ: PROVIDE FOR EMOTNL DEVEL
FUTACT10	3.008	1.198	1495	EXPECTATION: PLAY VARISTY ATHLETICS
FUTACT23	3.591	.577	1483	EXPECTATION: BE SATISFIED HERE
RATE8803	3.945	.883	1511	COMPETITIVENESS (1988)
RATE8804	4.097	.835	1511	DRIVE TO ACHIEVE (1988)
RATE8805	3.939	.874	1510	EMOTIONAL HEALTH (1988)
RATE8807	3.930	.870	1508	LEADERSHIP ABILITY (1988)
SCHLRSHP	1.110	.313	1537	STUDENT HAS AN ATHLETIC SCHOLARSHIP
DIVISN1	1.162	.369	1537	NCAA DIVISION ONE
REVENUE	1.102	.303	1537	PLAYED REVENUE SPORT
BASKETBL	1.049	.217	1537	PLAYED BASKETBALL
FOOTBALL	1.053	.224	1537	PLAYED FOOTBALL
SWIMMER	1.042	.200	1537	SWIMMING OR WATER POLO
BLACKATH	1.573	.621	1537	BLACK ATHLETE
BIGTIME	1.506	1.129	1537	BIGTIME COLLEGE ATHLETE
COLACT17	1.507	.500	1537	COLL ACT: IN INTERCOLLEGIATE SPORTS
SLFCHG12	4.015	.737	1507	SELF-RATING CHG: LEADERSHIP ABIL
SLFCHG14	4.134	.684	1508	SELF-RATING CHG: INTERPERSONL SKL
SLFCHG16	3.978	.902	1508	SELF-RATING CHG: CAREER COMMITTMENT
SLFCHG17	3.913	.839	1508	SELF-RATING CHG: TOLERANCE
SLFCHG18	3.834	.863	1507	SELF-RATING CHG: ACCEPT DIFF RACE
SLFCHG20	3.933	.913	1502	SELF-RATING CHG: MOTIV FOR DEGREE
SATIS12	4.168	.960	1509	SATISFACTION: OPPTY TO TALK TO PROF
SATIS13	4.111	1.067	1509	SATISFACTION: OPPTY FOR EXTRACURR
SATIS14	3.666	1.097	1499	SATISFACTION: CAMPUS SOCIAL LIFE
SATIS16	2.998	1.449	1510	SATISFACTION: ACADEMIC TUTOR/ASSIST
SATIS17	3.349	1.095	1506	SATISFACTION: ACADEMIC ADVISING
SATIS18	3.050	1.277	1508	SATISFACTION: CAREER COUSNELING
SATIS21	3.870	.994	1506	SATISFACTION: CONTACT WITH FACULTY

SATIS22	3.857	.987	1506	SATISFACTION: RELATIONS W FACULTY
SATIS26	4.135	.878	1507	SATISFACTION: OVERALL COLLEGE EXPER
GOAL8408	2.864	.855	1494	GOAL: BE VERY WELL OFF FINANCIALLY
GOAL8808	2.612	.895	1505	BE VERY WELL OFF FINANCIALLY (1988)
GOAL8417	2.277	.871	1490	GOAL: PROMOTE RACIAL UNDERSTANDING
GOAL8817	2.186	.925	1502	PROMOTE RACIAL UNDERSTANDING (1988)

Appendix B

Instruments

111085

PLEASE PRINT YOUR NAME _____ (First, Middle or Maiden, Last)

When were you born? (Month 01-12, Day 01-31, Year)

HOME STREET ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____ ( ) Area Code Home Phone No

DIRECTIONS

Your responses will be read by an optical mark reader. Your careful observance of these few simple rules will be most appreciated.

- Use only black lead pencil (No. 2 is ideal).
- Make heavy black marks that fill the circle.
- Erase cleanly any answer you wish to change.
- Make no stray markings of any kind.

EXAMPLE:

Will marks made with ballpoint or felt-tip marker be properly read? Yes ○ No ●

Dear Student:

The information in this form is being collected as part of a continuing study of higher education conducted jointly by the American Council on Education and the University of California at Los Angeles. Your voluntary participation in this research is being solicited in order to achieve a better understanding of how students are affected by their college experiences. Detailed information on the goals and design of this research program are furnished in research reports available from the Higher Education Research Institute at UCLA. Identifying information has been requested in order to make subsequent mail follow-up studies possible. Your response will be held in the strictest professional confidence.

PLEASE USE #2 PENCIL

Sincerely, Alexander W. Astin

Alexander W. Astin, Director
Higher Education Research Institute

DO NOT MARK IN THIS AREA

MARK IN THIS AREA ONLY IF DIRECTED — CHF. CODE

1. Your sex: Male ○ Female ○

2. How old will you be on December 31 of this year? (Mark one)

16 or younger	21-24 ○
17 ○	25-29 ○
18 ○	30-39 ○
19	40-54 ○
20	55 or older ○

3. In what year did you graduate from high school? (Mark one)

1984 ○	Did not graduate but
1983 ○	passed G.E.D. test ○
1982 ○	Never completed
1981 or earlier ○	high school ○

4. Are you enrolled (or enrolling) as a: (Mark one)

Full-time student? ○
Part-time student? ○

(Note: Please check that your answer markings are completely darkening the circles. Do not use pen or make ✓'s or X's. Thank You.)

5. Where did you get the money to pay for college this year? (Write in actual dollar amounts. Write 0 if none.)

Grants and scholarships	$
All loans	$
Work or savings	$
Parents and or spouse	$
Other sources	$

6a. How many persons are currently dependent on you for support (include yourself and your parents, if applicable)?

1 2 3 4 5 6 or more

6b. How many of those dependents other than yourself are currently attending college?

None 1 2 3 or more

7. What was your average grade in high school? (Mark one)

A or A+ B C
A- B- D
B+ C+

8. Where did you rank academically in your high school graduating class? (Mark one)

Top 20% ○ Fourth 20% ○
Second 20% ○ Lowest 20% ○
Middle 20% ○

9. Are you: (Mark one)

Not presently married ○
Married living with spouse
Married not living with spouse

10. Prior to this term, have you ever taken courses for credit at this institution?

Yes ○ No ○

11. Since leaving high school, have you ever taken courses at any other institution?

(Mark all that apply in each column)	For Credit	Not for Credit
No		
Yes, at a junior or comty. college		
Yes, at a four-year college or university		
Yes, at some other postsecondary school (For ex., technical, vocational, business)		

12. From what kind of secondary school did you graduate? (Mark one)

Public ○
Private (denominational) ○
Private (nondenominational) ○
Other ○

13. Have you had, or do you feel that you will need, any special tutoring or remedial work in any of the following subjects? (Mark all that apply)

	Have Had	Will Need		Have Had	Will Need
English	○	○	Social studies	○	○
Reading	○	○	Science	○	○
Mathematics	○	○	Foreign language	○	○

14. Where do you plan to live during the fall term? If you had a choice, where would you have preferred to live?

(Mark one in each column)	Plan To Live	Prefer To Live
With parents or relatives	○	○
Other private home, apt. or rm.	○	○
College dormitory	○	○
Fraternity or sorority house	○	○
Other campus student housing	○	○
Other	○	○

15. Is this college your: (Mark one)

First choice? ○ Less than third
Second choice? ○ choice ○
Third choice? ○

16. To how many colleges other than this one did you apply for admission this year?

No other 1 3 5
2 4 6 or more

Note: If you applied to no other colleges, skip to item 18 on the next page.

17. How many other acceptances did you receive this year? (Mark one)

None ○ 1 ○ 3 ○ 5 ○
2 ○ 4 6 or more

18. How much of your first year's educational expenses (room, board, tuition, and fees) do you expect to cover from each of the sources listed below? (Mark one answer for each possible source)

	None	$1–$499	$500–$999	$1,000–$1,499	$1,500–$2,000	Over $2,000
a. My Own or Family Resources						
Parents, other relatives, or friends	○	○	○	○	○	○
Spouse	○	○	○	○	○	○
Savings from summer work	○	○	○	○	○	○
Other savings	○	○	○	○	○	○
Full-time job while in college	○	○	○	○	○	○
Part-time job while in college	○	○	○	○	○	○
b. Aid Which Need Not Be Repaid						
Pell Grant	○	○	○	○	○	○
Supplemental Educational Opportunity Grant	○	○	○	○	○	○
State Scholarship or Grant	○	○	○	○	○	○
College Work-Study Grant	○	○	○	○	○	○
College Grant/Scholarship (other than above)	○	○	○	○	○	○
Other private grant	○	○	○	○	○	○
Your GI benefits	○	○	○	○	○	○
Your parent's GI benefits	○	○	○	○	○	○
Other government aid (ROTC, BIA, Social Security, etc.)	○	○	○	○	○	○
c. Aid Which Must Be Repaid						
Federal Guaranteed Student Loan	○	○	○	○	○	○
National Direct Student Loan	○	○	○	○	○	○
Other College Loan	○	○	○	○	○	○
Other Loan	○	○	○	○	○	○
d. Other Than Above	○	○	○	○	○	○

[illegible] Otherwise go on to Question 20.

19. Was the aid you are receiving awarded on the basis of:
(Mark all that apply)

	Yes	No
Academic merit	○	○
Financial need	○	○
Athletic talent	○	○
Other talent (music, art, etc.)	○	○
Other	○	○

20. Were you last year, or will you be this year:

	Last Year	This Year
Living with your parents (for more than five consecutive weeks)	○	○
Listed as a dependent on your parents' Federal Income Tax Return	○	○
Receiving assistance worth $600 or more from your parents	○	○

21. Are you: (Mark all that apply)

- White/Caucasian ○
- Black/Negro/Afro-American ○
- American Indian ○
- Asian-American/Oriental ○
- Mexican-American/Chicano ○
- Puerto Rican-American ○
- Other ○

22. Are you a U.S. citizen? ○ Yes ○ No

23. Are you a twin? (Mark one)

- No ○
- Yes, identical ○
- Yes, fraternal ○

24. For the activities below, indicate which ones you did during the past year. If you engaged in an activity frequently, mark (F). If you engaged in an activity one or more times, but not frequently, mark (O) (occasionally). Mark (N) (not at all) if you have not performed the activity during the past year.
(Mark one for each item)

	Frequently	Occasionally	Not at all
Participated in a speech or debate contest	(F)	(O)	(N)
Wrote a computer program	(F)	(O)	(N)
Played a musical instrument	(F)	(O)	(N)
Took a course on TV	(F)	(O)	(N)
Took a computer-assisted course	(F)	(O)	(N)
Attended a religious service	(F)	(O)	(N)
Elected president of one or more student organizations	(F)	(O)	(N)
Participated in a music contest	(F)	(O)	(N)
Was bored in class	(F)	(O)	(N)
Had a major part in a play	(F)	(O)	(N)
Won a varsity letter for sports	(F)	(O)	(N)
Failed to complete a homework assignment on time	(F)	(O)	(N)
Won a prize or award in an art competition	(F)	(O)	(N)
Edited the school paper, yearbook, or literary magazine	(F)	(O)	(N)
Participated in a science contest	(F)	(O)	(N)
Did extra (unassigned) work reading for a course	(F)	(O)	(N)
Overslept and missed a class or appointment	(F)	(O)	(N)
Smoked cigarettes	(F)	(O)	(N)
Took vitamins	(F)	(O)	(N)
Performed volunteer work	(F)	(O)	(N)
Took a tranquilizing pill	(F)	(O)	(N)
Missed school because of illness	(F)	(O)	(N)
Attended a public recital or concert	(F)	(O)	(N)
Jogged	(F)	(O)	(N)
Other vigorous exercise	(F)	(O)	(N)
Drank beer	(F)	(O)	(N)
Stayed up all night	(F)	(O)	(N)
Worked in a local, state, or national political campaign	(F)	(O)	(N)

25. How many miles is this college from your permanent home? (Mark one)

- 5 or less ○
- 6-10 ○
- 11-50 ○
- 51-100 ○
- 101-500 ○
- More than 500 ○

26. What is the highest academic degree that you intend to obtain?
(Mark one in each column)

	Highest Planned	Highest Planned at this college
None	○	○
Vocational certificate	○	○
Associate (A.A. or equivalent)	○	○
Bachelor's degree (B.A., B.S., etc.)	○	○
Master's degree (M.A., M.S., etc.)	○	○
Ph.D. or Ed.D.	○	○
M.D., D.O., D.D.S. or D.V.M.	○	○
LL.B., or J.D. (Law)	○	○
B.D. or M.DIV. (Divinity)	○	○
Other	○	○

27. In deciding to go to college, how important to you was each of the following reasons?
(Mark one answer for each possible reason)

	Very important	Somewhat important	Not important
My parents wanted me to go	(V)	(S)	(N)
I could not find a job	(V)	(S)	(N)
I wanted to get away from home	(V)	(S)	(N)
To be able to get a better job	(V)	(S)	(N)
To gain a general education and appreciation of ideas	(V)	(S)	(N)
To improve my reading and study skills	(V)	(S)	(N)
There was nothing better to do	(V)	(S)	(N)
To make me a more cultured person	(V)	(S)	(N)
To be able to make more money	(V)	(S)	(N)
To learn more about things that interest me	(V)	(S)	(N)
To meet new and interesting people	(V)	(S)	(N)
To prepare myself for graduate or professional school	(V)	(S)	(N)

28. Do you have any concern about your ability to finance your college education? (Mark one)

- None (I am confident that I will have sufficient funds) ○
- Some concern (but I will probably have enough funds) ○
- Major concern (not sure I will have enough funds to complete college) ○

29. How would you characterize your political views? (Mark one)

- Far left ○
- Liberal ○
- Middle-of-the-road ○
- Conservative ○
- Far right ○

30. What is your best estimate of your parents' total income last year? Consider income from all sources before taxes. (Mark one)

Less than $4,000 ○	$20,000–24,999 ○
$4,000–5,999 ○	$25,000–29,999 ○
$6,000–7,999 ○	$30,000–34,999 ○
$8,000–9,999 ○	$35,000–39,999 ○
$10,000–12,499 ○	$40,000–49,999 ○
$12,500–14,999 ○	$50,000–99,999 ○
$15,000–19,999 ○	$100,000 or more ○

31. What is the highest level of formal education obtained by your parents?
(Mark one in each column)

	Father	Mother
Grammar school or less	○	○
Some high school	○	○
High school graduate	○	○
Postsecondary school other than college	○	○
Some college	○	○
College degree	○	○
Some graduate school	○	○
Graduate degree	○	○

32. Mark only three responses, one in each column.

(M) Your mother's occupation
(F) Your father's occupation
(Y) Your probable career occupation

NOTE: If your father or mother is deceased, please indicate his or her last occupation.

	Y	F	M
Accountant or actuary	Y	F	M
Actor or entertainer	Y	F	M
Architect or urban planner	Y	F	M
Artist	Y	F	M
Business (clerical)	Y	F	M
Business executive (management, administrator)	Y	F	M
Business owner or proprietor	Y	F	M
Business salesman or buyer	Y	F	M
Clergyman (minister, priest)	Y	F	M
Clergy (other religious)	Y	F	M
Clinical psychologist	Y	F	M
College teacher	Y	F	M
Computer programmer or analyst	Y	F	M
Conservationist or forester	Y	F	M
Dentist (including orthodontist)	Y	F	M
Dietitian or home economist	Y	F	M
Engineer	Y	F	M
Farmer or rancher	Y	F	M
Foreign service worker (including diplomat)	Y	F	M
Homemaker (full-time)	Y	F	M
Interior decorator (including designer)	Y	F	M
Interpreter (translator)	Y	F	M
Lab technician or hygienist	Y	F	M
Law enforcement officer	Y	F	M
Lawyer (attorney) or judge	Y	F	M
Military service (career)	Y	F	M
Musician (performer, composer)	Y	F	M
Nurse	Y	F	M
Optometrist	Y	F	M
Pharmacist	Y	F	M
Physician	Y	F	M
School counselor	Y	F	M
School principal or superintendent	Y	F	M
Scientific researcher	Y	F	M
Social, welfare or recreation worker	Y	F	M
Statistician	Y	F	M
Therapist (physical, occupational, speech)	Y	F	M
Teacher or administrator (elementary)	Y	F	M
Teacher or administrator (secondary)	Y	F	M
Veterinarian	Y	F	M
Writer or journalist	Y	F	M
Skilled trades	Y	F	M
Other	Y		
Undecided	Y		
Laborer (unskilled)		F	M
Semi-skilled worker		F	M
Other occupation		F	M
Unemployed		F	M

33. Below are some reasons that might have influenced your decision to attend this particular college. How important was each reason in your decision to come here? (Mark one answer for each possible reason)

	Very important	Somewhat important	Not important
My relatives wanted me to come here	V	S	N
My teacher advised me	V	S	N
This college has a very good academic reputation	V	S	N
This college has a good reputation for its social activities	V	S	N
I was offered financial assistance	V	S	N
This college offers special educational programs	V	S	N
This college has low tuition	V	S	N
My guidance counselor advised me	V	S	N
I wanted to live near home	V	S	N
A friend suggested attending	V	S	N
A college rep. recruited me	V	S	N
The athletic dept. recruited me	V	S	N
This college's graduates gain admission to top graduate professional schools	V	S	N
This college's graduates get good jobs	V	S	N
Not offered financial aid by first choice college	V	S	N

34. Do you have a disability? (Mark all that apply)

None	○	Learning disability	○
Hearing	○	Health-related	○
Speech	○	Partially sighted or blind	○
Orthopedic	○	Other	○

35. Current religious preference (Mark one in each column)

	Yours	Father's	Mother's
Baptist	Y	F	M
Buddhist	Y	F	M
Congregational (U.C.C.)	Y	F	M
Eastern Orthodox	Y	F	M
Islamic	Y	F	M
Jewish	Y	F	M
Latter Day Saints (Mormon)	Y	F	M
Lutheran	Y	F	M
Methodist	Y	F	M
Quaker (Society of Friends)	Y	F	M
Roman Catholic	Y	F	M
Seventh Day Adventist	Y	F	M
Unitarian-Universalist	Y	F	M
Other Protestant	Y	F	M
Other Religion	Y	F	M
None	Y	F	M

36. During high school (grades 9-12) how many years did you study each of the following subjects? (Mark one for each item)

	None	½ yr.	1 yr.	2 yrs.	3 yrs.	4 yrs.	5 yrs. or more
English	0	½	1	2	3	4	5
Mathematics	0	½	1	2	3	4	5
Foreign Language	0	½	1	2	3	4	5
Physical Science	0	½	1	2	3	4	5
Biological Science	0	½	1	2	3	4	5
History/Am. Govt.	0	½	1	2	3	4	5
Other Social Sciences	0	½	1	2	3	4	5
Computer Science	0	½	1	2	3	4	5
Art and/or Music	0	½	1	2	3	4	5

37. Mark one in each row:

1 Disagree Strongly
2 Disagree Somewhat
3 Agree Somewhat
4 Agree Strongly

The Federal government is not doing enough to protect the consumer from faulty goods and services	4	3	2	1
The Federal government is not doing enough to promote disarmament	4	3	2	1
The Federal government is not doing enough to control environmental pollution	4	3	2	1
The Federal government should do more to discourage energy consumption	4	3	2	1
Federal military spending should be increased	4	3	2	1
The death penalty should be abolished	4	3	2	1
A national health care plan is needed to cover everybody's medical costs	4	3	2	1
Abortion should be legalized	4	3	2	1
Grading in the high schools has become too easy	4	3	2	1
The activities of married women are best confined to the home and family	4	3	2	1
A couple should live together for some time before deciding to get married	4	3	2	1
If two people really like each other, it's all right for them to have sex even if they've known each other for only a very short time	4	3	2	1
Women should receive the same salary and opportunities for advancement as men in comparable positions	4	3	2	1
Wealthy people should pay a larger share of taxes than they do now	4	3	2	1
Marijuana should be legalized	4	3	2	1
Busing is O.K. if it helps to achieve racial balance in the schools	4	3	2	1
It is important to have laws prohibiting homosexual relationships	4	3	2	1
College officials have the right to regulate student behavior off campus	4	3	2	1
Faculty promotions should be based in part on student evaluations	4	3	2	1
College grades should be abolished	4	3	2	1
College officials have the right to ban persons with extreme views from speaking on campus	4	3	2	1
Students from disadvantaged social backgrounds should be given preferential treatment in college admissions	4	3	2	1
All college graduates should be able to demonstrate some minimal competency in written English and mathematics	4	3	2	1

38. Below is a list of different undergraduate major fields grouped into general categories. Mark only one circle to indicate your probable field of study.

ARTS AND HUMANITIES
- Art, fine and applied
- English (language and literature)
- History
- Journalism
- Language and Literature (except English)
- Music
- Philosophy
- Speech
- Theater or Drama
- Theology or Religion
- Other Arts and Humanities

BIOLOGICAL SCIENCE
- Biology (general)
- Biochemistry or Biophysics
- Botany
- Marine (Life) Science
- Microbiology or Bacteriology
- Zoology
- Other Biological Science

BUSINESS
- Accounting
- Business Admin. (general)
- Finance
- Marketing
- Management
- Secretarial Studies
- Other Business

EDUCATION
- Business Education
- Elementary Education
- Music or Art Education
- Physical Education or Recreation
- Secondary Education
- Special Education
- Other Education

ENGINEERING
- Aeronautical or Astronautical Eng
- Civil Engineering
- Chemical Engineering
- Electrical or Electronic Engineering
- Industrial Engineering
- Mechanical Engineering
- Other Engineering

PHYSICAL SCIENCE
- Astronomy
- Atmospheric Science (incl. Meteorology)
- Chemistry
- Earth Science
- Marine Science (incl. Oceanography)
- Mathematics
- Physics
- Statistics
- Other Physical Science

PROFESSIONAL
- Architecture or Urban Planning
- Home Economics
- Health Technology (medical, dental, laboratory)
- Library or Archival Science
- Nursing
- Pharmacy
- Predental, Premedicine, Preveterinary
- Therapy (occupational, physical, speech)
- Other Professional

SOCIAL SCIENCE
- Anthropology
- Economics
- Ethnic Studies
- Geography
- Political Science (gov't., international relations)
- Psychology
- Social Work
- Sociology
- Women's Studies
- Other Social Science

TECHNICAL
- Building Trades
- Data Processing or Computer Programming
- Drafting or Design
- Electronics
- Mechanics
- Other Technical

OTHER FIELDS
- Agriculture
- Communications (radio, T.V., etc.)
- Computer Science
- Forestry
- Law Enforcement
- Military Science
- Other Field
- Undecided

39. Indicate the importance to you personally of each of the following: (Mark one for each item)

(N) Not important (S) Somewhat important (V) Very important (E) Essential

	E	V	S	N
Becoming accomplished in one of the performing arts (acting, dancing, etc.)				
Becoming an authority in my field				
Obtaining recognition from my colleagues for contributions to my special field				
Influencing the political structure				
Influencing social values				
Raising a family				
Having administrative responsibility for the work of others				
Being very well off financially				
Helping others who are in difficulty				
Making a theoretical contribution to science				
Writing original works (poems, novels, short stories, etc.)				
Creating artistic work (painting, sculpture, decorating, etc.)				
Being successful in a business of my own				
Becoming involved in programs to clean up the environment				
Developing a meaningful philosophy of life				
Participating in a community action program				
Helping to promote racial understanding				
Keeping up to date with political affairs				

40. What is your best guess as to the chances that you will: (Mark one for each item)

(N) No Chance (L) Very Little Chance (S) Some Chance (V) Very Good Chance

	V	S	L	N
Change major field?				
Change career choice?				
Fail one or more courses?				
Graduate with honors?				
Be elected to a student office?				
Get a job to help pay for college expenses?				
Work full time while attending college?				
Join a social fraternity, sorority, or club?				
Live in a coeducational dorm?				
Play varsity/intercollegiate athletics?				
Be elected to an academic honor society?				
Make at least a "B" average?				
Need extra time to complete your degree requirements?				
Get tutoring help in specific courses?				
Have to work at an outside job during college?				
Seek vocational counseling?				
Seek individual counseling on personal problems?				
Get a bachelor's degree (B.A., B.S., etc.)?				
Participate in student protests or demonstrations?				
Drop out of this college temporarily (exclude transferring)?				
Drop out permanently (exclude transferring)?				
Transfer to another college before graduating?				
Be satisfied with your college?				
Find a job after college in the field for which you were trained?				
Get married while in college? (skip if married)				
Get married within a year after college? (skip if married)				

The Higher Education Research Institute at UCLA actively encourages the colleges that participate in this survey to conduct local studies of their students. If these studies involve collecting follow-up data, it is necessary for the institutions to know the students' ID numbers so that follow-up data can be linked with the data from this survey. If your college asks for a tape copy of the data and signs an agreement to use it only for research purposes, do we have your permission to include your ID number in such a tape?

	Yes	No

41. (A) (B) (C) (D) (E)
42. (A) (B) (C) (D) (E)
43. (A) (B) (C) (D) (E)
44. (A) (B) (C) (D) (E)
45. (A) (B) (C) (D) (E)

The remaining circles are provided for items additionally designed by your college (other than by the Higher Education Research Institute). If your college has chosen to use the circles, observe carefully the supplemental directions given you.

46. (A) (B) (C) (D) (E)
47. (A) (B) (C) (D) (E)
48. (A) (B) (C) (D) (E)
49. (A) (B) (C) (D) (E)
50. (A) (B) (C) (D) (E)

THANK YOU!

Prepared by the Higher Education Research Institute, University of California, Los Angeles, California 90024. Processed by Interex Corporation, 4855 West 77th St. Minneapolis, MN 55435

SR401A/8044-Intran-54321

1988 FOLLOW-UP SURVEY OF COLLEGE STUDENTS

IF THE NAME, ADDRESS OR BIRTHDATE IS INCORRECT, PLEASE PRINT THE CORRECT INFORMATION BELOW

NAME: FIRST | LAST | MI
ADDRESS:
CITY | STATE | ZIP
PHONE:
BIRTHDATE: MONTH | DAY | YEAR

PHONE: (123) 456-7890
BIRTH DATE: 01/23/45

1 1234
2097151
SAMP L STUDENT
123 4TH STREET
ANYTOWN, CA 12345
123456/84

DIRECTIONS:

Your responses will be read by an optical mark reader. Your observance of these few directions will be most appreciated.

- Use only a black lead pencil (No. 2 is ideal).
- Make heavy black marks that fill the circle.
- Erase cleanly any answer you wish to change.
- Make no stray markings of any kind.

EXAMPLE: Will marks with a ball-point or felt-tip pen be properly read?

◯ YES ● NO

Use NO. 2 pencil only ▼

1. If you could make your college choice over again, would you still choose to enroll at the college you entered as a freshman?

◯ Definitely yes ◯ Probably not ◯ Don't know
◯ Probably I would ◯ Definitely not

2. Since entering college have you...

	YES	NO
Enrolled in honors or advanced courses	Y	N
Joined or been a member of a fraternity or sorority	Y	N
Gotten married	Y	N
Failed a course or class	Y	N
Had a part-time job on campus	Y	N
Had a part-time job off-campus	Y	N
Worked full-time while attending school	Y	N
Participated in a study abroad program	Y	N
Participated in a college internship program	Y	N
Participated in campus protests/demonstrations	Y	N
Been elected to a student office	Y	N
Worked in local/state/national political campaign	Y	N
Taken reading/study skills classes	Y	N
Received career/vocational counseling	Y	N
Received personal/psychological counseling	Y	N
Worked on a professor's research project	Y	N
Participated in intercollegiate sports	Y	N
Taken remedial or developmental courses	Y	N

3. Your sex: Male ◯ Female ◯

4. How much money have you borrowed to help pay for college expenses since you entered college as a freshman?

From family $
From all other sources (banks, college, etc.) $

5. Which option listed below best describes your enrollment status for each year you attended college?

(Mark one in each column)

	YEAR 1	2	3	4
Attended full-time	1	2	3	4
Attended part-time	1	2	3	4
Not enrolled	1	2	3	4

6. Which option listed below best describes where you lived during each year you attended college?

(Mark one in each column)

	YEAR 1	2	3	4
With parents or relatives	1	2	3	4
Other private home, apartment, room	1	2	3	4
College dormitory	1	2	3	4
Fraternity or sorority house	1	2	3	4
Other campus student housing	1	2	3	4
Other	1	2	3	4

7. Since entering college as a freshman, have you taken a leave of absence, withdrawn from school, or transferred to another college? (If more than one applies, mark only the most recent)

◯ NO ⟶ Please go to question 9 on page 2
◯ Took a leave of absence
◯ Withdrew from school
◯ Transferred before completing my program

} Please answer Question 8

8. How important were each of the reasons listed below in your decision to take a leave of absence, withdraw from school, or transfer?
(Mark one answer for each reason)

	Very Important	Somewhat Important	Not Important
Wanted to reconsider my goals and interests	V	S	N
Changed my career plans	V	S	N
Wanted practical experience	V	S	N
Didn't feel like I fit in at my first college	V	S	N
Was bored with my coursework	V	S	N
Wanted to go to a school with a better academic reputation	V	S	N
Wanted a better social life	V	S	N
Wanted to be closer to home	V	S	N
Had a good job offer	V	S	N
Wasn't doing as well academically as I had expected	V	S	N
Family responsibilities	V	S	N
Tired of being a student	V	S	N
Had money problems and could no longer afford to attend college	V	S	N
Wanted to go to a school that offered a wider selection of courses or more major field choices	V	S	N

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9. Please rate your satisfaction with the college you entered as a freshman on each of the aspects of campus life listed below

(Mark one in each row)

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Science and mathematics courses	V	S	N	D	?
Humanities courses	V	S	N	D	?
Social science courses	V	S	N	D	?
Courses in your major field	V	S	N	D	?
General education requirements	V	S	N	D	?
Relevance of coursework to everyday life	V	S	N	D	?
Overall quality of instruction	V	S	N	D	?
Laboratory facilities and equipment	V	S	N	D	?
Library facilities	V	S	N	D	?
Computer facilities	V	S	N	D	?
Opportunities to take interdisciplinary courses	V	S	N	D	?
Opportunities to discuss coursework and assignments outside of class with professors	V	S	N	D	?
Opportunities to participate in extracurricular activities	V	S	N	D	?
Campus social life	V	S	N	D	?
[illegible]	V	S	N	D	?
Tutorial help or other academic assistance	V	S	N	D	?
Academic advising	V	S	N	D	?
Career counseling and advising	V	S	N	D	?
Student housing	V	S	N	D	?
Financial aid services	V	S	N	D	?
Amount of contact with faculty and administrators	V	S	N	D	?
Overall relationships with faculty and administrators	V	S	N	D	?
Opportunities to attend films, concerts, etc.	V	S	N	D	?
Job placement services for students	V	S	N	D	?
Campus health services	V	S	N	D	?
Overall college experience	V	S	N	D	?

10. Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate estimate of how you see yourself.

(Mark one in each row)

	Highest 10%	Above Average	Average	Below Average	Lowest 10%
Academic ability					
Artistic ability					
Competitiveness					
Drive to achieve					
Emotional health					
Ability to learn a foreign language					
Leadership ability					
Mathematical ability					
Physical health					
Popularity					
Popularity with the opposite sex					
Public speaking ability					
Self-confidence (intellectual)					
Self-confidence (social)					
Writing ability					

11. Please mark your probable career/occupation below:

- Accountant or actuary
- Actor or entertainer
- Architect or urban planner
- Artist
- Business (clerical)
- Business executive (management, administrator)
- Business owner or proprietor
- Business salesperson or buyer
- Clergy (minister, priest)
- Clergy (other religious)
- Clinical psychologist
- College teacher
- Computer programmer or analyst
- Conservationist or forester
- Dentist (including orthodontist)
- Dietitian or home economist
- Engineer
- Farmer or rancher
- Foreign service worker (including diplomat)
- Homemaker (full-time)
- Interior decorator (including designer)
- Interpreter (translator)
- Lab technician or hygienist
- Law enforcement officer
- Lawyer (attorney) or judge
- Military service (career)
- Musician (performer, composer)
- Nurse
- Optometrist
- Pharmacist
- Physician
- School counselor
- School principal or superintendent
- Scientific researcher
- Social welfare or recreation worker
- Statistician
- Therapist (physical, occupational, speech)
- Teacher or administrator (elementary)
- Teacher or administrator (secondary)
- Veterinarian
- Writer or journalist
- Skilled trades
- Other
- Undecided

12. How important are each of the following reasons for your career choice or career preference?

(Mark one in each row)

	Essential	Very Important	Somewhat Important	Not Important
Job opportunities are generally available	E	V	S	N
I enjoy working with the kind of people involved in this field	E	V	S	N
The work would be interesting	E	V	S	N
This is a well-paying career	E	V	S	N
This choice satisfies my parents' hopes	E	V	S	N
The work would be challenging	E	V	S	N
I feel this enables me to make a contribution to society	E	V	S	N
There are opportunities for rapid career advancement	E	V	S	N
There are opportunities for freedom of action	E	V	S	N

13. During your last year in college, how much time did you spend during a typical week doing the following activities?

(Mark one in each row)

	None	Less than 1 hour	1-2	3-5	6-10	11-15	16-20	Over 20
Hours per week								
Classes/labs								
Studying/homework								
Socializing with friends								
Talking with faculty outside of class								
Exercising/sports								
Reading for pleasure								
Using a personal computer								
Partying								
Working (for pay)								
Volunteer work								
Student clubs/groups								
Watching TV								
Commuting to campus								
Religious services/ meetings								
Hobbies								

14. What do you plan to be doing in the fall of 1988? (Mark all that apply)

- Attending undergraduate college full-time
- Attending undergraduate college part-time
- Attending graduate or professional school
- Attending a vocational training program
- Working full-time
- Working part-time
- Serving in the Armed Forces
- Traveling, hostelling, or backpacking
- Doing volunteer work
- Staying at home to be with (or start) my family

15. Compared with when you entered college as a freshman, how would you now describe your:

(Mark one for each item)

	Much Stronger	Stronger	No Change	Weaker	Much Weaker
General knowledge	5	4	3	2	1
Analytical and problem-solving skills	5	4	3	2	1
Knowledge of a particular field or discipline	5	4	3	2	1
Ability to think critically	5	4	3	2	1
Ability to speak and write clearly	5	4	3	2	1
Foreign language ability	5	4	3	2	1
Job related skills	5	4	3	2	1
Religious beliefs and convictions	5	4	3	2	1
Interest in pursuing a graduate/professional degree	5	4	3	2	1
Concern about financial security	5	4	3	2	1
Preparation for graduate or professional school	5	4	3	2	1
Leadership abilities	5	4	3	2	1
Ability to work independently	5	4	3	2	1
Interpersonal skills	5	4	3	2	1
Cultural awareness and appreciation	5	4	3	2	1
Commitment to a specific career	5	4	3	2	1
Tolerance of persons with different beliefs	5	4	3	2	1
Acceptance of people from different races/cultures	5	4	3	2	1
Confidence in your academic abilities	5	4	3	2	1
Motivation to earn a college degree	5	4	3	2	1

16. Indicate the importance to you personally of each of the following:

(Mark one for each item)

	Essential	Very Important	Somewhat Important	Not Important
Becoming accomplished in one of the performing arts (acting, dancing, etc.)	E	V	S	N
Becoming an authority in my field	E	V	S	N
Obtaining recognition from my colleagues for contributions to my special field	E	V	S	N
Influencing the political structure	E	V	S	N
Influencing social values	E	V	S	N
Raising a family	E	V	S	N
Having administrative responsibility for the work of others	E	V	S	N
Being very well off financially	E	V	S	N
Helping others who are in difficulty	E	V	S	N
Making a theoretical contribution to science	E	V	S	N
Writing original works (poems, novels, short stories, etc.)	E	V	S	N
Creating artistic work (painting, sculpture, decorating, etc.)	E	V	S	N
Being successful in a business of my own	E	V	S	N
Becoming involved in programs to clean up the environment	E	V	S	N
Developing a meaningful philosophy of life	E	V	S	N
Participating in a community action program	E	V	S	N
Helping to promote racial understanding	E	V	S	N
Becoming an expert on finance and commerce	E	V	S	N
Getting married	E	V	S	N

17. Your current religious preference:
(Mark one)

Baptist	○	Lutheran	○
Buddhist	○	Methodist	○
Congregational	○	Presbyterian	○
Eastern Orthodox	○	Quaker	○
Episcopal	○	Roman Catholic	○
Hindu	○	Seventh Day Adventist	○
Islamic	○	Other Protestant	○
Jewish	○	Other Religion	○
LDS (Mormon)	○	None	○

18. Below is a list of statements about the goals of higher education. In your opinion, how important was each goal at the college you entered as a freshman?

(Mark one in each row)

	Essential	Very Important	Somewhat Important	Not Important
To convey an appreciation of the liberal arts	E	V	S	N
To master knowledge in a discipline	E	V	S	N
To increase students' abilities to undertake self-directed learning	E	V	S	N
To develop the ability to think clearly	E	V	S	N
To develop creative capacities	E	V	S	N
To conduct research	E	V	S	N
To prepare students for employment after college	E	V	S	N
To prepare students for graduate school	E	V	S	N
To develop moral character	E	V	S	N
To develop religious beliefs/convictions	E	V	S	N
To assist students to gain a deeper level of self-understanding	E	V	S	N
To provide for students' emotional development	E	V	S	N
To develop responsible citizens	E	V	S	N
To provide the local community and business with skilled workers	E	V	S	N
To provide students with critical tools to survive in a contemporary society	E	V	S	N
To prepare students for family living	E	V	S	N

19. For the activities listed below please indicate how often—Frequently, Occasionally, or Not at all—you engaged in each during the past year.

(Mark one for each item)

	Frequently	Occasionally	Not at all
Jogged	F	O	N
Worked on an independent research project	F	O	N
Took an interdisciplinary course	F	O	N
Discussed course content with students outside of class	F	O	N
Assisted faculty in teaching a course	F	O	N
Worked on group projects in class	F	O	N
Been a guest in a professor's home	F	O	N
Tutored another student	F	O	N
Smoked cigarettes	F	O	N
Been lonely or homesick	F	O	N
Confided in a friend about a personal problem	F	O	N
Felt depressed	F	O	N
Felt overwhelmed by all I had to do	F	O	N
Stayed up all night	F	O	N
Copied homework from another student	F	O	N
Participated in intramural sports	F	O	N
Cheated on a school quiz or exam	F	O	N
Attended a musical recital or concert	F	O	N
Missed classes because of illness	F	O	N
Felt like leaving college	F	O	N
Failed to complete homework on time	F	O	N
Drank beer	F	O	N
Drank wine or liquor	F	O	N

20. Mark the one circle that best describes your undergraduate grade average.

○ A (3.75–4.0)	○ B– C+ (2.25–2.74)
○ A–, B+ (3.25–3.74)	○ C (1.75–2.24)
○ B (2.75–3.24)	○ C– or less (below 1.75)

21. Below is a list of different undergraduate major fields grouped into general categories. Mark only one circle to indicate your current/last field of study.

ARTS AND HUMANITIES
- Art, fine and applied ○
- English (language and literature) ○
- History ○
- Journalism ○
- Language and Literature (except English) ○
- Music ○
- Philosophy ○
- Speech ○
- Theater or Drama ○
- Theology or Religion ○
- Other Arts and Humanities ○

BIOLOGICAL SCIENCE
- Biology (general) ○
- Biochemistry or Biophysics ○
- Botany ○
- Marine (Life) Science ○
- Microbiology or Bacteriology ○
- Zoology ○
- Other Biological Science ○

BUSINESS
- Accounting ○
- Business Administration (general) ○
- Finance ○
- Marketing ○
- Management ○
- Secretarial Studies ○
- Other Business ○

EDUCATION
- Business Education ○
- Elementary Education ○
- Music or Art Education ○
- Physical Education or Recreation ○
- Secondary Education ○
- Special Education ○
- Other Education ○

ENGINEERING
- Aeronautical or Astronautical Engineering ○
- Civil Engineering ○
- Chemical Engineering ○
- Electrical or Electronic Engineering ○
- Industrial Engineering ○
- Mechanical Engineering ○
- Other Engineering ○

PHYSICAL SCIENCE
- Astronomy ○
- Atmospheric Science (incl. Meteorology) ○
- Chemistry ○
- Earth Science ○
- Marine Science (incl. Oceanography) ○
- Mathematics ○
- Physics ○
- Statistics ○
- Other Physical Science ○

PROFESSIONAL
- Architecture or Urban Planning ○
- Home Economics ○
- Health Technology (medical, dental, laboratory) ○
- Library/Archival Science ○
- Nursing ○
- Pharmacy ○
- Predental, Premedicine, Preveterinary ○
- Therapy (occupational, physical, speech) ○
- Other Professional ○

SOCIAL SCIENCE
- Anthropology ○
- Economics ○
- Ethnic Studies ○
- Geography ○
- Political Science (gov't., international relations) ○
- Psychology ○
- Social Work ○
- Sociology ○
- Women's Studies ○
- Other Social Science ○

TECHNICAL
- Building Trades ○
- Data Processing or Computer Programming ○
- Drafting or Design ○
- Electronics ○
- Mechanics ○
- Other Technical ○

OTHER FIELDS
- Agriculture ○
- Communications (radio, TV, etc.) ○
- Computer Science ○
- Forestry ○
- Law Enforcement ○
- Military Science ○
- Other Field ○
- Undecided ○

22. Please indicate your agreement with each of the following statements. (Mark one in each row)

	Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly
The Federal government is not doing enough to promote disarmament	4	3	2	1
Federal military spending should be increased	4	3	2	1
The Federal government should raise taxes to help reduce the deficit	4	3	2	1
Grading in colleges has become too easy	4	3	2	1
Faculty promotions should be based in part on student evaluations	4	3	2	1
If two people really like each other it's all right for them to have sex even if they've known each other for only a very short time	4	3	2	1
College officials have the right to regulate student behavior off-campus	4	3	2	1
Colleges should not invest funds in companies that do business with South Africa	4	3	2	1
The activities of married women are best confined to the home and family	4	3	2	1
The chief benefit of a college education is that it increases one's earning power	4	3	2	1
Busing is O.K. if it helps to achieve racial balance in the schools	4	3	2	1
It is important to have laws prohibiting homosexual relationships	4	3	2	1
A national health care plan is needed to cover everybody's medical costs	4	3	2	1
A couple should live together for some time before deciding to get married	4	3	2	1
Marijuana should be legalized	4	3	2	1
Abortion should be legalized	4	3	2	1
Employers should be allowed to require drug testing of employees or job applicants	4	3	2	1
The best way to control AIDS is through widespread mandatory testing	4	3	2	1

23. How would you characterize your political views? (Mark one)
- Far left ○
- Liberal ○
- Middle-of-the-road ○
- Conservative ○
- Far right ○

24. Please indicate (A) the highest degree you have earned as of June 1988 and (B) the highest degree you plan to complete.

(Mark one in each column)

	Highest Degree Earned	Highest Degree Planned
None	A	B
Vocational certificate	A	B
Associate (A.A. or equivalent)	A	B
Bachelor's degree (B.A., B.S., etc.)	A	B
Master's degree (M.A., M.S., etc.)	A	B
Ph.D. or Ed.D.	A	B
M.D., D.O., D.D.S., or D.V.M.	A	B
LL.B., or J.D. (Law)	A	B
B.D. or M.DIV. (Divinity)	A	B
Other	A	B

The Higher Education Research Institute at UCLA [illegible]

○ Yes ○ No

25. PLEASE PROVIDE YOUR SOCIAL SECURITY NO.

0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9

ADDITIONAL QUESTIONS:

If you received an additional page of questions, please mark your answers below. Find the number of the question and fill in the circle of your answer.

26. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
27. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
28. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
29. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
30. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
31. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
32. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
33. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
34. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
35. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
36. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
37. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
38. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
39. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
40. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
41. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
42. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
43. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
44. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
45. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ

THANK YOU!

Please return your completed questionnaire in the postage-paid envelope to:

Higher Education Research Institute
2510 N. Dodge St.
Iowa City, IA 52240

2097151

ADDITIONAL QUESTIONS

Please respond to questions 26 - 45 on the questionnaire form. Do NOT respond on this page. Please indicate ONLY ONE response for each item.

26. Did you receive an athletic scholarship?
    A. YES, full B. YES, partial C. NO

27. Which intercollegiate sport did you participate in? (Choose only one response, indicating your main sport)
    A. Basketball B. Football C. Swimming or water polo
    D. Other sports E. None

28. Did you "redshirt" for a year?
    A. YES B. NO

29. At what level of competition did you participate?
    A. NCAA Division I
    B. NCAA Division II
    C. NCAA Division III
    D. NAIA
    E. Not sure

30. Did you take any remedial or developmental courses?
    A. NO
    B. YES, but they did not count towards graduation
    C. YES, and received credit toward my degree for them

31. Please rate your overall satisfaction with the player-coach relationships you have had in college.
    A. Very satisfied
    B. Satisfied
    C. Neutral
    D. Dissatisfied
    E. Very dissatisfied

32. I take easier classes during the season of my sport.
    A. Always B. Usually C. Sometimes D. Never

Please indicate the degree to which you agree or disagree with statements #33 - 45, using this scale:
    A. Agree strongly
    B. Agree somewhat
    C. Disagree somewhat
    D. Disagree strongly

33. My athletic experiences have not improved my ability to cooperate with others.

34. Drug testing is effective in decreasing drug use by college athletes.

35. The overall campus environment for minority (nonwhite) students is very supportive.

36. As an athlete, I feel "used" by my school and coach.

37. Special gifts for athletes (e.g. cash, cars, stereos, jewelry) and other illegal recruiting practices are common at my school.

38. I have a very strong desire to play professional sports.

39. I have a very good chance to actually have a career as a professional athlete.

40. Competition is good because it makes me strive for excellence.

41. Drug testing accurately identifies those who are using drugs.

42. It's O.K. to sacrifice fair play and sportsmanship to win.

43. I'm in favor of testing college athletes for illegal drug use (for example, cocaine, marijuana, steroids).

44. Racism is a major problem on my college campus.

45. Legal drugs (for example alcohol and over-the-counter medications) should not be included in the drug testing of athletes.

Thank you for responding!

COOPERATIVE INSTITUTIONAL RESEARCH PROGRAM

American Council on Education/University of California, Los Angeles

NATIONAL SURVEY OF STUDENT ATHLETES

July 11, 1988

Dear Student:

You may remember that, when you first entered college, you participated in a national research project by completing a survey questionnaire. We are now following up those of you who responded to the survey in Fall 1984, to find out what has happened since then and to ask about your experiences in college. The results of this survey will be used to improve higher-education programs at campuses across the country.

We ask that you help us by completing the enclosed questionnaire and returning it in the enclosed postage reply envelope. Please complete the questionnaire even if you withdrew from college or changed schools. We are very interested in learning about your experiences in college, no matter how long you attended. The information you provide is CONFIDENTIAL: your responses will not be reported in any way that would permit anyone to identify you or your answers to the questionnaire form.

SPECIAL NOTE!
You have been selected to participate in a special survey of college student athletes. We are trying to learn more about the effects of intercollegiate athletics on student attitudes and experiences. You will find an additional blue page of questions enclosed in this envelope. Please mark your answers to these supplemental questions at the end of the survey form, as directed.

Your participation is very important to the success of this study. THANK YOU for your cooperation!

Sincerely,

Alexander W. Astin

Alexander W. Astin
Professor of Higher Education