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**A SOCIAL PSYCHOLOGICAL
EXAMINATION OF THE RELATIONSHIP
BETWEEN ATHLETIC PARTICIPATION
AND DELINQUENT BEHAVIOUR**

by

R. E. WATKINS, B.A., M.Sc.

A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Doctor of Philosophy

Department of Psychology

Carleton University
Ottawa, Ontario
March 22, 1999
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and Delinquent Behaviour"*

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Abstract

The relationship between participation in organized sport and delinquency was examined in the context of the Psychology of Criminal Conduct (PCC) approach to the study of delinquency. Previous studies have examined the American high school athlete. Their findings indicated that varsity athletes committed less delinquency than non-participants. In this study, 590 Canadian secondary school students were surveyed using more comprehensive and precise measures of delinquent behaviour and sport participation than have heretofore been reported.

Organized sport participants committed significantly more delinquency than non-participants. This seemingly contradictory result is accounted for by the consideration of all venues of a student's organized sport participation not solely varsity sports. Community-based and mixed-locale participation athletes committed significantly more delinquent behaviour than varsity-only athletes and non-athletes. Varsity-only athletes committed the least amount delinquency.

Type of sport participation was found to be an important variable. Athletes who participated exclusively in popular, team and contact (PTC) sports exhibited greater degrees of two major PCC risk factors for delinquency,

namely, pro-delinquency attitudes, values and beliefs and delinquent personality. These same athletes reported significantly more delinquency than other athletes and non-participants. Athletes who played individual, "unpopular" and non-contact sports were the least delinquent group, less delinquent even than the non-participants.

The nature of one's motivation for participation in organized sport was found to be a more important factor in relation to level of delinquency than was type of sport participation. Motivation of a cooperative nature was highly and negatively correlated with delinquency and with the PCC delinquency risk factors. Implications of this finding for the role of organized sport participation in the socialization of youth are discussed.

Other variables significantly related to higher levels of delinquency were: gender (being male); age (being older); location of school (urban); and level of instruction (general). However, in this latter instance, level of delinquency was again accounted for by PCC risk factors--pro-delinquency attitudes, values and beliefs, delinquent personality and association with delinquency prone peers.

Finally, in a PCC context, sport participation is considered a minor delinquency risk factor accounting for less than two per cent of the total delinquency variance.

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Introduction

It has been argued that *play*, when examined as an activity important in human physical and social development, precedes the formation of culture itself (Huizinga, 1970) or, perhaps a claim on a more modest scale, that it predates the beginnings of civilization (Mandell, 1984). The importance of *sport*--a component of the larger domain of play--in the life and development of the individual, and to the society of which he or she is a member, has been recognized in the Western World since the flowering of classical Greece (Hyland, 1990). And lest one be considered open to the charge of cultural ethnocentrism in making this point, it should be noted that evidence of the existence and importance of sport comes down to us from other cultural contexts in antiquity besides the antecedents of Western civilization (cf., Mandell, 1984, Chapter 2). Similarly, LeUnes and Nation (1989) recount reports of archeological evidence of sport and games associated with the Sumerian civilization extant during the period 3000 to 1100 B.C. These same authors cite other evidence which points to their existence and importance in the ancient Chinese and Indian civilizations.

The Social Sciences and Sport

Interest in sport from an academic, objective and empirical point of view, and investigation into its importance and the role it plays in the life of an individual and the society of which he/she is a part, is relatively recent, paralleling (but occurring later in their development) the rise and subsequent growth of the social sciences from the turn of the century onward. Indeed, according to Hyland (1990), philosophy itself--considered, along with physics, to be the oldest of all the academic disciplines in the classical tradition of ancient Greece--has only recently begun (i.e., with the publication of *Sport: A Philosophic Inquiry*, Weiss, 1969) to treat sport as a worthwhile topic for serious intellectual inquiry in its own right, as opposed to its use in the writings of many prominent philosophers as a metaphor for the addressing of other, seemingly more important, issues concerning life and the human condition (see also Snyder & Spreitzer, 1978).

Both of the social science disciplines (perhaps more properly termed "sub-disciplines") that claim the domain of sport as their primary area of interest, that is, the sociology of sport and sport psychology, trace their beginnings in North America to the post World War II era. Snyder and Spreitzer, in a 1974 review of the state of the field, described the sociology of sport of the day as a fledgling

"subfield" of sociology proper. Another prominent author and researcher in the area (Kenyon, 1986), when preparing a review of the literature, chose 1965 as his starting point presumably because there was little or no relevant literature extant prior to that date. A European viewpoint is in essential agreement: Dunning and Rojek (1992) cite 1970 as representing the threshold for the establishment of a sociology of sport and leisure.

A history of sport psychology (Wiggins, 1984), while recognizing some early activity at the beginning of this century, identified the mid-1960s as the period of the coalescence of research activity and publication into an identifiable academic field of study and subsequent evolution into a profession (see also Salmela, 1984, 1992). Interestingly, much of this work was carried out in university settings within departments of physical education, kinesiology and leisure studies as opposed to emanating from departments of the parent discipline, i.e., mainstream psychology (Wiggins, 1984).

Sport and Delinquency

Given the relative recency of the attention paid to sport by the social scientific community, it is not surprising that cross-disciplinary topics of relevance to it have received differing degrees of attention ranging from the

seemingly exhaustive to the virtually nonexistent. One area that has not been a focus of a great deal of research activity to date is the examination of the relationship between sport or athletic participation and delinquency (Purdy & Richard, 1983; Stark, Kent & Finke, 1987; Stevenson, 1985).

(Note: this relationship is here differentiated from the perhaps more explored connection thought to exist between the broader area of leisure and delinquency--see below for a discussion of the unfortunate overlap in meaning and usage of terms such as "leisure", "recreation", "sport", "games" and "play".) A literature search of the relevant academic disciplines including criminology, social psychology, sport psychology, the sociology of sport, the sociology of education, recreation and leisure studies, forensic psychology, and program evaluation yielded very little in the way of *empirical* research. On the other hand, much in the way of unsubstantiated opinion and unstated assumption (e.g., Middleton, 1982; Newman, 1983; Nolan, 1955) concerning the relationship was encountered (see Robins, 1990, for a corroborative experience and conclusion applicable to research in the U.K.). As Donnelly (1981) has noted:

[A] relationship between sport and juvenile delinquency has long been assumed, and in some quarters accepted. Among educators, physical educators and penologists the *belief* [italics added] has been expressed that delinquent behaviour may be controlled by substituting sporting activities into an individual's behavioral repertoire (p.415).

Interestingly, much of the research uncovered that is relevant to the relationship of interest, comes from those interested in the sociology of sport and the ramifications that participation in sport has for the realms of social development and socialization (and vice-versa).

Psychology, Sport and Delinquency

Although one of the early "fathers" of American psychology, G. Stanley Hall, has been noted (cf., Segrave & Hastad, 1984a, p.117) as having characterized athletics as being a "wholesome vent for... reckless courage" that might otherwise find a more negative outlet, psychology itself has paid relatively little investigative (i.e., empirical) attention to the relationship between delinquency and sport (again, as differentiated from the somewhat more explored connection between leisure and delinquency). In addition to the previously mentioned survey of the literature, further evidence of this state of affairs is adducible from a review of the area of juvenile delinquency undertaken for a relatively recent edition of the *Annual Review of Psychology* (Binder, 1988). Nowhere in the review is the relationship between sport and delinquency remarked upon or cited as an area of interest or study.

Like its parent discipline, sport psychology has seemingly taken little direct interest in the relationship

per se although it must be emphasized that sport psychologists have been active in the examination of the role which sport participation plays in the social development of children. A concern that the role be of a healthy and positive nature has been a major area of study for many sport psychologists [e.g., Butt, 1987; Orlick, 1972, 1978a, 1978b, 1982; Orlick & Botterill, 1977; Wankel & Kreisel, 1985a]).

Perusal of a current and popular introductory sport psychology textbook (LeUnes and Nation, 1989) perhaps best exemplifies the noted lack of direct interest. Neither in the various definitions provided therein of sport psychology, nor in the list of activities offered as those undertaken by sports psychologists, does discussion or acknowledgement of interest in the relationship appear. The closest approach to it concerns the connection between aggression and sport. Research in this area is directed toward gaining either an understanding of aggression as displayed by participants during the performance of an athletic activity or of aggression as exhibited by the spectators attending an athletic contest (see also Bakker, Whiting & van der Brug, 1990). Such research is *not* directed toward gaining an understanding of a possible relationship between athletic participation and delinquent behaviour displayed by the participant away from the playing

field. Similarly, Salmela (1981, 1984, 1992) in presenting overviews of the profession of sport psychology world-wide, makes no mention of research or professional activity touching upon a possible relationship between sport and delinquency (see also Halliwell, 1989, with reference to applied sport psychology in Canada; Nideffer, 1984).

Given this seeming lack of research activity by the discipline in general and by those of its members specifically interested either in delinquent behaviour or in sport, it is not surprising that, as we shall see below, most of the relatively little empirical research which has been carried out has approached the topic essentially from a sociological vantage point. And interestingly enough, most of this from those interested in the sociology of sport and the ramifications that participation has for other realms of social life as opposed to those interested in deviancy and deviant behaviour per se, that is, criminologists.

The Psychology of Delinquent Behaviour

The examination of delinquency and delinquent behaviour (as well as adult criminality and criminal behaviour) from a psychological perspective is far from being a neglected area of research. On the contrary, it constitutes an active and productive branch of the discipline (e.g., Andrews & Bonta, 1994; Andrews, Zinger, Hoge, Bonta, Gendreau & Cullen,

1990). However, just as the social psychological study of sport from a psychological perspective has been criticized by sociologists as entailing too narrow, too functional an approach (cf., Rojek, 1992; Segrave & Hastad, 1984b), so too the psychological approach to delinquency within a social psychological framework is not without its detractors from mainstream sociology and criminology, and for similar reasons (Andrews, 1990; Andrews & Bonta, 1994; Andrews & Wormith, 1989). Binder (1988), in his review of the area, remarked upon the fact that, beginning in the 1920s and 1930s with the rise of the Chicago school of sociology, the study of delinquency and criminality has largely been dominated (usurped?) by sociology and its sister disciplines (e.g., criminology and social work). Consideration of ecological and social factors as causative and supportive of delinquent and criminal behaviour to the exclusion of the serious consideration of individual differences, that is, to the exclusion of psychology's domain, had seemingly become the norm (Binder, 1988; Farrington, 1985; see also Andrews, 1990; Andrews & Bonta, 1994; Andrews & Wormith, 1989, for further comment and a discussion of how, and perhaps why, this situation has come to pass).

However, running contrary to the current thought and practise of mainstream criminology, Andrews and several collaborators, over the period of the last twenty or so

years, have systematically developed a comprehensive body of empirically-based knowledge which they describe as a subfield of psychology and which they have termed the Psychology of Criminal Conduct (PCC) (Andrews & Bonta, 1994). It is a social learning and behavioural-based, social psychological approach to the study of delinquent and criminal behaviour. One of the major tenets of PCC may be said to be that individual differences do matter in the understanding, the prediction, the prevention and the treatment, of such behaviour. PCC posits several major and minor risk factors that must be taken into consideration when one wishes to understand, or to estimate the potentiality for, criminal or delinquent behaviour of individuals. Four of the major risk factors of particular relevance to this study are:

1. Antisocial/procriminal attitudes, values and beliefs and cognitive-emotional states (i.e., personal cognitive supports for crime);
2. Procriminal associates and isolation from anticriminal others (i.e., interpersonal supports for crime);
3. Temperamental and personality factors conducive to criminal activity including psychopathy, weak socialization, impulsivity, restless aggressive energy, egocentrism, below-average verbal intelligence, a taste for risk, and weak problem-solving/self-regulation skills;
4. History of antisocial behaviour evident from a young age, in a variety of settings and involving a number and variety acts. (Andrews & Bonta, 1994, p. 232.)

It is within the context of the PCC approach to the understanding of delinquent behaviour that the relationship between sport and delinquency will be examined in this dissertation.

What is Sport?--Confusing Terminology

Perusal of the relevant literature reveals a fair degree of conceptual vagueness and semantic overlap in the use of related terms such as "play", "leisure", "recreation", "games" and "sport" and a resultant impreciseness in their application. Often they are used interchangeably (particularly the first three terms--Giddens, 1964). However one notes that certain specific activities which may be included or understood by the use of one term would be excluded or not understood by the use of another, for example, the passive activities of reading, listening to music or watching television. These certainly qualify as leisure activities, might well qualify as recreational activities yet might not as easily be accepted as examples of play activities and would certainly not be considered games, sport or athletic activities. Similarly, so-called cultural activities such as arts and crafts, music, drama, literary events, discussions groups, etc., would qualify as leisure and recreational activities (Hormachea & Hormachea, 1983) and perhaps some of them as play, maybe even games

(e.g., chess or bridge) but certainly not as sport. Certain other activities are immediately recognizable and universally accepted as play, games and/or sport/athletic activities--for example, various team and individual sports such as hockey (ice or field), baseball, track and field, football, tennis, swimming, skiing, and so on. However, other activities including billiards, darts, hunting, fishing, mountain climbing, and hiking may be considered more appropriately as play, leisure and/or recreational activities (and some as games) as opposed to hardcore sport. Their inclusion or exclusion as sport would seem to be open to question depending upon one's operational definition of that which constitutes a sport or athletic endeavour. Such considerations lead to the realization that an objective, empirical inquiry into the nature of the relationship between sport and delinquency first requires a fairly specific definition of the term "sport" in order to contribute to, rather than detract from, the methodological soundness of the inquiry (cf., Snyder & Spreitzer, 1978; Stevenson, 1985).

One dimension on which the terms lend themselves to differentiation is the generality or inclusiveness of the activities which they may imply. Taking such a position, it could be argued that specificity increases (or inclusivity decreases) as one moves on a continuum, say, from "leisure"

to "recreation" to "play" to "games" to "sport" (e.g., Guttman, 1978, 1988; Mason & Wilson, 1988; Snyder & Spreitzer, 1978). Or, on another level, play, games or sport may be thought of as the activities one engages in for recreational purposes during one's leisure (i.e., non-work related) time. Still another definitional parameter could refer to the level of organization involved in the mounting of the play, game or athletic activity and the degree to which the activity is regulated by rules (cf., Partington, 1982). Related to this line of thinking, within the domain of sport itself, one could distinguish between "recreational sport" and "elite sport" based upon the degree of organization involved, the stringency with which rules are adhered to or enforced, the goal of the activity itself (e.g., the concepts of "process" or "product" as different objectives of youth participation in sport [Dubois, 1986] or sport as an opportunity to experience and learn positive life skills [Orlick, 1978]), as well as the level of skill involved and/or required (see also Snyder & Spreitzer, 1978). For the purposes at hand, the terms "play", "games" and "sport" are more germane (although, as we shall see below, the others are frequently encountered in the literature, sometimes appropriately, sometimes not) and therefore attention will be directed exclusively toward them in terms of attempting further differentiation and definition.

Play, the more general term, is defined by Guttmann (1978) as "...any nonutilitarian physical or intellectual activity pursued for its own sake (p.3)". Based upon that definition, he postulated a refinement of the relationship between the constructs "play", "games" and "sport" according to the model depicted in Figure 1. Thus "sport" is differentiated from "play" and "games" in that it is defined as consisting of:

... 'playful' physical contests, that is, ... nonutilitarian contests which include an important measure of physical as well as intellectual skill. (Although we ... speak of 'physical contests,' it is hard to imagine a sport completely devoid of intellectual skill.) (Guttmann, 1978, p.7.)

Partington (1982) makes a similar distinction between the concepts of "play" and "sport" on the basis of the spontaneity and fun of an activity (play) versus one which is governed by rules and regulations (sport). Following these more specific conceptualizations of the term "sport", the definition to be used in this dissertation will be along the following lines: sport consists of an organized athletic endeavour, be it team or individual, that is regulated by an accepted and shared set of rules and, for the purposes of this dissertation, is of essentially a recreational or semi-formal (Snyder & Spreitzer, 1978), as opposed to an elite or a professional, nature. Such a definition is congruent with the argument that, in general, positive character change is more likely effected by sport participation at a less than

Figure 1

Relationship Between Play, Games and Sports

Note: Adapted from *A whole new ball game: An interpretation of American sports* (p. 2) by A. Guttman, 1988. Chapel Hill, NC: The University of North Carolina Press.

top or elite level of participation (i.e., at a recreational or semi-formal level) whereas top/elite level participation is thought by some to potentially lead to character deformation (Bakker et al., 1990). Furthermore, for the purposes of this paper, the term "athletic participation" and its derivatives will be used interchangeably with "sport(s) participation" to denote participation in organized sport as the latter term is defined above (see also Appendix A for the definition of organized sport provided to the student participants in the study).

Now to return to further consideration of topics which often employ a more general usage of the term and its synonyms/counterparts but which are, nonetheless, of direct relevance to the core concepts of this dissertation.

Sport as a Mechanism for Socialization

In the nineteenth century, the Duke of Wellington reportedly attributed the British victory over Napoleon at the Battle of Waterloo to lessons learned on the playing fields of Eton; that is, to the discipline inculcated, the self-confidence gained and the character formed through such athletic training and experience (Snyder & Spreitzer, 1974; Stark et al., 1987). The underlying assumption of Wellington's claim is reflected in the modern-day perception, common in much of the English-speaking world at least,

of the existence of a positive link between athletic participation and character formation, socialization and moral development (Mason & Wilson, 1988; Robins, 1990; Stevenson, 1975). This perception of a linkage can be traced, in a relatively modern context, to the mid-1800s.

Thomas Arnold, the headmaster of Rugby School in England from 1828 to 1842, is credited with having given *organized and supervised* sport an integral, if not privileged, place in that school's daily curriculum (Donnelly, 1981; McIntosh, 1971; Montagu, 1982; Robins, 1990; Segrave, 1983). His purpose in so doing was to attempt to make more effective use of the students' leisure time in order to combat the bullying, drunkenness, gambling, poaching and other forms of immoral (delinquent?) behaviour which were reportedly rampant at the school (though not exclusive to Rugby School alone) at the time (Donnelly, 1981; Robins, 1990). Sport was to be one of the mechanisms through which the inculcation of discipline, social responsibility and self-reliance would be accomplished (Robins, 1990). (Note: A review of Arnold's writings [Stanley, 1858] indicates a strong emphasis on developing the religious and academic aspects of the students' in-school lives as well.) Arnold's innovative approach served "...to press sports and games into the service of official education, as a form of social control (p. 10, Robins, 1990)." It was perceived to be such

a success that the concept was copied and applied by "[h]is disciples...who filled many important teaching posts from 1842 onwards (p. 6, McIntosh, 1971)." Thus the practice gained popularity and quickly spread to other similar institutions (i.e., English "public" schools) and beyond (Montagu, 1982; Robins, 1990).

In terms of research aimed at uncovering empirical evidence to support (or refute) the presumed link, Stevenson, in two, consecutive reviews (1975, 1985) of the social scientific literature on the socialization effects of sports participation concluded that the evidence of a relationship was equivocal at best (see also Peek, Picou, Alston & Curry, 1979). He looked at the effects of sport in relation to three broad areas which he described as psychological (i.e., essentially personality variables), behavioural (which included academic achievement and delinquency) and attitudes/values. It is worth noting that most of the studies reviewed in the 1975 article dealt with athletic participation at the high school level whereas the 1985 review was more heavily weighted with college level activity, both, not surprisingly, reflecting the American experience.

He found that, in terms of personality variables, the research produced conflicting evidence. There was no consistent support for any particular effect or change in

personality factors or structure correlated with athletic participation (see also Ogilvie & Tutko, 1985). Moreover, he considered the extant research to be fraught with methodological inadequacies. He further noted that this type of research declined drastically between 1973 and 1983 in comparison with pre-1973 activity in the area; during the later period Stevenson was able to uncover only seven published studies.

Insofar as academic achievement (and aspirations--see Rehberg, 1969; Rehberg & Schafer, 1968; Snyder & Spreitzer, 1978; Spreitzer & Pugh, 1973) was concerned, a positive relationship between it and athletic participation was found at the high school level while a slightly negative correlation resulted at the college level. A negative relationship held for delinquency, particularly for high school youths from "blue collar" backgrounds and for low achievers. However, in concert with points made earlier, Stevenson characterized delinquency as a marginal area of concern for researchers interested in the socialization aspects of sport participation.

The last topic of interest dealt with attitudes and values. Research in this area had mainly concerned itself with the relationship between societal ideals of sportsmanship and the reality of such a concept in actual practice. He declared this a dead issue without reaching any firm

conclusions concerning a causal relationship due to the fact that little or no research was being conducted and, again, to serious methodological flaws in what little of it was available.

Stevenson's overall conclusion regarding the correlation between sport participation and socialization was that "...the findings are inconsistent, confusing and often contradictory (p. 256, 1985)". He postulated two explanations to account for this state of affairs: either no relationship existed or the research to date was methodologically flawed (see also McCormack & Chalip, 1988). The methodological problems were thought to have compromised the research results, to have rendered it difficult to interpret the meaningfulness of the results and to have led to a decline in research activity in the area (see also Coakley, 1993). Finally, he noted that the sociology of sport had turned its attention almost exclusively to research questions concerning the process of the socialization into sport roles, that is, to a focus on elite athletes--where do they come from and how do they become elite. In a similar vein, mental skills training and the striving for excellence in athletic performance, may be said to occupy a large part of the research and practice agendas of sport psychology today (although there is a growing movement to encourage and enable the transfer such skills to other areas of one's life

such as work performance and quality of life in general [e.g., Orlick 1990, 1998]).

On the other hand, following in the tradition of the "accepted wisdom" of a positive link between sport participation and socialization, and applying it specifically to the deterrence of juvenile delinquency, Purdy and Richard (1983) in a theoretical paper which reviewed much of the relevant literature, posited six factors potentially at work in such a relationship:

- 1) the sport participant is greatly influenced by those significant others with whom contact regularly occurs (parents, friends, teachers, teammates and coaches);
- 2) these significant others are likely to adhere more rigidly to conventional and conforming behaviour;
- 3) emphasis within the sport environment is on traits such as hard work, character development, teamwork, deferred gratification--all of which serve to promote conformity;
- 4) involvement in sport leaves relatively little unstructured free time in which the [participant] could engage in delinquent activities;
- 5) the [participant], through the influence of significant others, both within (teammates and coaches) and outside (parents, teachers, and school authorities) of the sport environment, will internalize beliefs favouring conformity, adherence to societal norms, and respect for authority;
- 6) the label of ["athlete"] may play an important positive role in the prevention of delinquency by allowing the athlete to escape the stigmatized label of delinquent [even when delinquent behaviour occurs] (adapted from Purdy & Richard, 1983, p.190).

Thus we are left with an unclear picture of the role of sport in the socialization of youth yet a pervasive and

abiding common sense belief in the existence of a negative relationship between participation and delinquent behaviour persists. Furthermore, this belief is not without some empirical support though typically of an indirect or tangential nature revolving around the nature of the use of leisure time (e.g., Agnew & Petersen, 1989; Andrews 1984; Andrews & Bonta, 1994; Glueck & Glueck, 1950; Hirschi, 1969--a more detailed review of this evidence and other relevant studies is presented below).

Delinquency and Recreation: Prevention/Deterrence and Rehabilitation

Let us broaden the purview, for the moment, of one side of the relationship of interest by considering the connection between recreational and physical activities in general (activities which, of course, include the more narrowly defined concepts of sport or athletic participation used heretofore) and delinquent behaviour. In doing so, it is useful, for purposes of conceptual clarity, to differentiate between those activities directed toward prevention or deterrence of delinquent behaviour in contrast to those directed toward correction/rehabilitation of the delinquent individual (e.g., Mason & Wilson, 1988; Robins, 1990; Segrave, 1982).

Recreation has long been proposed as an effective rehabilitative tool available for use in the correctional process (Aguilar, 1986, 1987; Collingwood, 1977; Hormachea & Hormachea, 1983; Krichbaum & Alston, 1991; Munson, 1991; Segrave, 1982, 1983). At least two special issues of journals in the field of leisure and recreation studies have been devoted to the topic of therapeutic recreation in correctional settings (*Therapeutic Recreation Journal*, 1972; *Parks & Recreation*, 1981; see also Jewell, 1977; Orton, 1977). The articles contained therein are typically long on theory and proselytization but unhappily short on *empirical research* and the evaluation of existing programs and activities.

The few attempts at an empirical examination of programs and/or offender needs available in the literature concluded that, during incarceration, passive recreational activities were the most common, that active recreational pursuits varied directly with age (Aguilar & Asmussen, 1989; Orton, 1977; Williams, 1972), and that opportunities to pursue positive, prior-to-incarceration recreational interests often were not available within correctional institutional settings (Orton, 1977). Aguilar (1987), by means of a short-term (i.e., 5 week) leisure education program and a pre- and post-test psychometric assessment of the attitudes of delinquent adolescents attitudes toward delinquent acts,

showed that attitudes so measured did change in a positive direction following participation in the program.

Nevertheless, in terms of correctional, rehabilitative effectiveness, it may be said that, all things considered, the literature dealing with recreational and physical activities, to date, does not help to clarify the rather inconclusive outcomes summarized previously concerning sport participation and socialization.

The literature, both theoretical and empirical in nature, is generally consistent on one point, however, and that is the need for, and usefulness of, leisure education programs whether for deterrent or for rehabilitative purposes. As Wylie (1965) has stated, in a slightly different context:

Specialists in the fields of recreation and juvenile delinquency hesitate to try to indicate the relationships, if any, between delinquent acts, and the programs of recreation provided.... However, if recreation does meet its chief objective; that is, the wise use of leisure [time] then there is significant opportunity ... to keep [delinquents and] potential delinquents from misusing their leisure (p. 86, 1965).

Shades of the teachings of Thomas Arnold!

Turning to prevention/deterrence, the evidence for the efficacy of recreation in the form of community recreational programs is not overly encouraging in terms of their impact in the prevention or deterrence of delinquent behaviour in delinquency-prone, urban areas (Elliot, 1963; Lutzin & Orem,

1967; Todd, 1941; U.S. Department of Justice, 1981; Wylie, 1960, 1965; although some early positive evidence exists (Burns, 1907; Shanas, 1942; Truxal, 1929 [cited in Segrave, 1983] as well as some indirect support [U.S. Office of Criminal Justice Planning, 1977]). Robins (1990) in his review of the situation in the United Kingdom (which included both preventative and rehabilitative programs), concluded that:

A gap exists between straightforward assertions about the capacities of [physical activities and recreational pursuits] ... to ameliorate ... juvenile delinquency, and the scale, scope and variability of what happens on the ground (p. 88).

[P]ractical attempts at solutions to delinquency, which broadly involve sports/recreation ... tend to be small-scale, piece-meal and often haphazard, varying from agency to agency (p. 88).

There is little evidence of evaluation of the effect of programmes on young people (p. 89).

One interesting possibility extracted from the limited amount of research in the area is that wilderness, survival or adventure programs such as those mounted by the Outward Bound Schools and which are included under the general rubric of leisure, recreational and physical activities, may be effective rehabilitative tools when undertaking corrective intervention with individuals who are known delinquents or of deterrent usefulness with predelinquents, that is, children and youths prone to, or at high risk for, delinquency (e.g., Kelly & Baer, 1971). Yiannakis (1976, 1980;

Sugden & Yiannakis, 1982) advanced the proposition, on the basis of limited empirical support, that such programs are more relevant to delinquent and predelinquent youth because such youth tend to self-select out of sport or athletic programs due to the typical structured, organized nature of these activities. Sport programs are thus thought to be perceived as representative of the norms and mores of the larger society. Conformity to these norms and mores has either already been, or is in the process of being, rejected by these individuals. Furthermore, and in concert with the foregoing, such youth are hypothesized to be more attracted to individual, challenging, stimulus-seeking behaviour (see also Donnelly, 1981) typified by the wilderness adventure programs and to be more amenable and responsive to judgments made in accordance with small-group-defined standards, also typical of the way these programs are planned and managed, as opposed to being measured against extrinsic or universal (i.e., societal) standards of success and excellence.

Not surprisingly, in tune with other literature reviews related above, the rehabilitative/deterrent efficacy of wilderness adventure programs is not as clear-cut as Yiannakis' hypothesis would suggest in relation to delinquency; nor is the claim that athletes are more prone to behaviour of a conforming nature than are delinquents and/or predelinquents

(Schemp & Malmisur, 1985). For example, Mason and Wilson (1988) in a recent review concluded:

[I]t appears that great results have been claimed to emerge from wilderness and survival programs for delinquents. To a lesser extent, program evaluation has revealed that some of these claims are valid and reliable; namely, *that wilderness/survival programs do lead to improvements in self-concept and reductions in recidivism rates for participants*. To date these results have only been clearly evidenced within a short-time (sic) span (p. 58).

However, the long-term effects of these outdoor programs are yet to be settled in any definite way. It may be that *... outdoor programs are capable of producing short-term changes in the clients' behaviour and/or attitudes, but that on a long-term basis they are simply not effective* (p. 62).

In a similar vein, Partington (1977a, 1977b) in an evaluation of a wilderness adventure program for delinquent and predelinquent boys and girls between the ages of 14 and 15, offered the following thoughts upon finding no significant differences in psychological adjustment of the participants when compared to a control group:

Perhaps the most crushing inference to be drawn from this project is that, in retrospect, it is seen to rest on a suspect assumption; namely, that troubled youth can be helped by making them think more like "normals" --to expect that they can influence outcomes in their own lives (p. 41, 1977b).

[T]he rationale for [the program] was ... that disadvantaged students will be more likely to develop into well adjusted, achieving individuals.... that the rational contingencies and challenging situations in the ... program would foster a shift toward internal locus of control ... toward ... a subjective psychological state in which one expects to be able to cause things to happen, to change things in one's life, hopefully to perceive one's actions leading toward success (p. 63-64, 1977a).

Unfortunately, changing expectations without changing realities may arouse frustration and resentment. The ... program ... was not designed to change the actual reward structures in the [homes], schools and communities to which these participants returned (p. 41, 1977b).

At this point, having provided the necessary general background and context for the dissertation, it behooves one to return to the more specific relationship of interest and to examine in detail that research dealing directly with it.

Review of Relevant Research

Leisure and Delinquency

It may be said that Thomas Arnold's innovative efforts in the early-to-mid-nineteenth century of implementing, among other things, a program of organized and supervised sports that provided students with an opportunity to make constructive use of their leisure time, anticipated, in a sense, the finding of the Gluecks in their landmark study of juvenile delinquency (Glueck & Glueck, 1950). These investigators found interesting differences between the delinquent and non-delinquent subjects of their study in relation to their use of leisure time. The major dimensions on which leisure time activities of delinquents differed from non-delinquents were as follows:

- less leisure time spent at home by delinquents;
- less family group recreation activities by delinquents;
- greater preference for adventurous activities by delinquents;
- delinquents were less inclined to participate in supervised recreational activities;
- delinquents were less inclined to spend any of their leisure hours in circumscribed areas such as playgrounds;

(adapted from Glueck & Glueck, 1950, p. 277-278).

The Gluecks, in summarizing the complete findings of their study, grouped the variables related to delinquency under three headings: 1) non-causal factors; 2) factors with probable causal significance; and 3) behaviour reflecting significant traits. They included leisure time in this latter category thus suggesting that it is a correlated and/or moderating factor when considered in conjunction with delinquency. To the best of this writer's knowledge, their study was the first empirical investigation of the relationship between delinquency and leisure.

A more detailed investigation into the link between leisure and delinquency was undertaken by Agnew and Petersen (1989). Following a review of the theoretical literature (i.e., from a sociological approach as represented by social control, subcultural deviance and strain theories), they proposed eight hypotheses (not independent of one another please note) concerning the nature of the link arising from three basic factors of theoretical relevance to leisure itself. The factors and derivative hypotheses were as follows:

Factor I - Type of Leisure Activity:

- 1) A negative relationship should exist between delinquency and time spent in pleasurable, organized leisure activities;
- 2) A positive relationship should exist between delinquency and time spent in unsupervised, peer-oriented social activities.

- 3) A negative relationship should exist between delinquency and time spent doing liked leisure activities.

Factor II - With Whom Leisure Activities Are Done:

- 4) A negative relationship should exist between delinquency and the amount of time spent in liked leisure activities with parents;
- 5) A positive relationship should exist between delinquency and the amount of time spent in leisure activities with peers.

Factor III - Extent to Which the Activity is Liked:

- 6) A negative relationship should exist between delinquency and the amount of time spent in pleasurable leisure activities, excluding those activities explicitly hypothesized to foster delinquency;
- 7) A positive relationship should exist between delinquency and the amount of time spent in disliked leisure activities;
- 8) The relationship between delinquency and type of leisure activity will be conditioned by the extent to which the leisure activity is liked.

(Adapted from Agnew & Petersen, 1989, pp. 335-337).

The subject pool consisted of a sample of 600 high school students of both sexes from a white, middle-class suburb of Atlanta, Georgia. A questionnaire was administered to measure leisure activities participated in, the frequency of participation and self-reported delinquency. The authors found support for a positive relationship between delinquency and time spent in 1) unsupervised leisure (i.e., social and "hanging out") activities, 2) leisure activities with peers, and 3) least favourite activities done with parents, providing at least partial

support for hypotheses 2, 5 and 7. A significant negative relationship with delinquency was found for time spent in 1) organized leisure activities, 2) passive entertainment, and 3) noncompetitive sports, providing partial support for hypotheses 1 and 3. (Note: both passive entertainment and noncompetitive sport were by far the most frequent leisure activities engaged in). Support was not evidenced for hypothesis 4 in contrast to the findings of the Gluecks (1950). A variation of this hypothesis did receive statistical support, however, in that delinquency was shown to be positively related to time spent in least favourite activities with parents, which speaks tangentially to hypothesis number 8 as well. Finally, no support was adduced for hypothesis 6. According to the authors, a more detailed study of leisure than had hitherto taken place demonstrated that all three factors noted above were therefore relevant, to greater or lesser degrees, to the relationship between leisure and delinquency. Potential criticisms of the research in terms of the subject population used in the study were countered by the authors with the contention that, if anything, its demographics worked against the underlying premise of the research.

The overall conclusion which Agnew and Petersen extract from their study is that leisure is an important factor in

the study of delinquency--as important as any other! They make this claim on the following basis:

[O]ur research shows that the association between leisure and delinquency remained largely unchanged when we controlled for sex, age, mother's or father's education, and the size of the community in which the respondent spent most of his or her life. And, as we saw ... the association between delinquency and many of the leisure variables remained even after controls for the leading predictors of delinquency were introduced.... [W]e believe more plausible arguments can be made for leisure causing delinquency than for delinquency causing leisure (p 347).

Sport/Athletic Participation and Delinquency

It is generally agreed (Stark, Kent & Finke, 1987; Segrave, 1983) that Schafer (1969a, 1969b) conducted the first direct, empirical examination of the relationship between sport or athletic participation and delinquency. He collected data on male students in two mid-western American high schools, one serving a predominantly middle-class area, the other a predominantly working-class area. Participation versus non-participation in interscholastic athletics constituted the independent variable, while official juvenile court records were the measure of the dependent variable, that is, delinquency. He also used two covariate measures: 1) past academic achievement; and 2) father's occupational status (dichotomized into blue collar and white collar groups). Schafer's data indicated an overall negative correlation between participation in interscholastic

athletics and delinquency. However, when controlled for the covariates of father's occupational status and student's past academic achievement, the negative correlation held only for the low academic achievement boys from blue collar homes. Lastly, the rate of delinquency for athletes did not vary according to popularity of the sport played (i.e., football or basketball were labelled major sports, all others minor) or amount of participation (i.e., high participation = three or more seasons; low participation = less than three seasons).

In terms of methodology, Schafer recognized a potential problem with his sampling procedure in that he did not control for the so-called "self-selection" effect; that is, as noted above, it has been suggested (e.g., Stevenson, 1975, 1985; Sugden & Yiannakis, 1982; Yiannakis 1976, 1980) that predelinquents and delinquents often do not participate in, or do dropout from, mainstream activities. If this was the case in Schafer's study, such individuals would be under-represented (or unrepresented) in the interscholastic athletic participation group while being over-represented in the non-participation group thereby casting into uncertainty any supposedly demonstrated meaningful relationship between athletic participation and delinquency (but see Stark et al., 1987, below, for a counter argument to the "self-selection" hypothesis). Another weakness in the study's

design involved the use of official court records to provide a measure of the rate of the subjects' delinquent behaviour. Such a measure generally results in an underestimation of delinquent behaviour (Agnew, 1990; Andrews & Bonta, 1991; Andrews, Wormith & Keissling, 1985; Peek, Picou, Alston & Curry, 1979; Segrave, 1980, 1983). Finally, Schafer's analysis of the data was purely descriptive consisting of comparisons of group percentages--inferential statistical analysis, that is, the application of appropriate parametric or nonparametric tests of significance, was not attempted.

Landers and Landers (1978) also collected data on male high school students, in this case from a single high school located in a town of approximately 8000 people (situated roughly 15 miles from a larger urban centre with a population of 300,000) in the northeastern United States. The study was of an archival nature in that data were collected from school yearbooks covering a fourteen year period. In addition to examining the relationship between athletic participation and delinquency, participation in other extracurricular activities (i.e., defined as service-leadership activities) was studied relative to delinquency. Delinquent status was determined by reviewing official court records covering the same fourteen year period. (Statistical analysis was undertaken to determine if the court records reflected potential bias due to socioeconomic status--no

significant differences between participation categories were found ($F(3, 237) = .98, p > .05$.) The overall conclusion was that participation in athletics *and/or* other extra-curricular activities were negatively correlated with delinquency ($\chi^2(3, N = 521) = 34.77, p < .001$). There was no difference in the delinquency rates of athletic participants when compared to other extra-curricular activities participants, although those students who participated in both activities had the lowest rate (trend only) of delinquency.

Buhrmann (1977) turned his attention to a sample of high school girls ($N = 857$) from seven different rural and small town high schools in the state of Iowa. His measure of "delinquency" (he uses the term "deviancy") was a five-item, Likert-type scale addressing the following behaviours: smoking; drinking alcoholic beverages; breaking school rules and regulations; cheating on tests and examinations; and getting into trouble with police or the law. The scale was intended to reflect "... behaviour which violates institutional expectations, i.e., expectations which are shared and recognized as legitimate within a social system (p. 18)". The independent variable was based on athletic ratings of the students by their coaches and participation in at least one interscholastic sport. The results demonstrated the by-now-familiar negative correlation (as measured by gamma)

between delinquency (i.e., "deviancy" in this case) and athletic participation. In addition, the data suggested that deviancy among athletes declines as they progress through school, that is, "... twelfth grade athletes are less deviant than ninth, tenth or eleventh grade athletes when compared to non-athletes (p.33)." Deviancy varied inversely with degree of participation and popularity of the varsity sport played. Finally, athletes appeared less deviant than non-athlete students on physical health variables (e.g., smoking and drinking) but more deviant on social variables (e.g., breaking rules and regulations).

A second study of 551 female high school students was undertaken in the province of Alberta (Buhrmann & Bratton, 1978) using the same dependent variable measure of deviancy and the same independent variable measure of athletic participation as those used previously (Buhrmann (1977)). The findings of the second study revealed some interesting cultural differences between Canada and the United States in relation to the visibility of, importance of, and resources allocated to, high school varsity sports (cf., Jerome & Phillips, 1976) and some interesting insight into the questionable methodology of assuming that a questionnaire applied in an American context will be equally appropriate in a Canadian one. Outcomes concerning the relationship of interest, however, were relatively similar to the Iowa study

with one notable exception: the Alberta athletes had progressively more trouble with the law when compared across school year (i.e., grades 10 through 12). The authors offered the suggestion that traffic violations may serve as a possible explanation for this unexpected increase in deviancy/delinquency but did not explain why this should be so in Alberta but not in Iowa.

In contrast to the findings of Schafer (1969a, 1969b) noted above, the Alberta and Iowa studies suggested that quantity (i.e., degree) of athletic participation (both studies) and popularity of the sport(s) played (Iowa study only) were negatively associated with deviant behaviour although it should be noted that the operational definitions of these two variables differed between the two sets of studies. On the other hand, the quality of participation (as determined by coaches assessments) displayed no particular relationship with "delinquency" in the Iowa study while the data of the Alberta study was suggestive of a negative relationship between quality of performance, grade level and deviancy, that is, the self-reported overall deviancy of students rated as good athletes by their coaches declined from grade 10 to grade 12.

In the context of this dissertation, that is, an investigation into the relationship between sport/athletic participation and delinquency, one obvious weakness of

Buhrmann's two studies has to do with the dependent variable used and its adequacy as a measure of delinquency (although, to be fair, and as noted above, the authors speak of "deviancy" not "delinquency"). Only one of the dependent variable measures deals with outright illegal activities (i.e., getting into trouble with police or the law) and therefore with formal delinquency per se. On the other hand, in terms of the "self-selection" hypothesis, one might argue that the criteria used by Buhrmann et al., to differentiate athletes from non-athletes may have helped control, to some degree, for the possible bias suggested by the hypothesis. Individuals who did experience some athletic participation but not enough quantitatively, or judged to be of sufficiently high calibre, qualitatively, to meet the criteria for inclusion as varsity athletes, were included in the non-athlete group thus arguably rendering the two groups (i.e., athlete and non-athlete) more comparable on an activity-participation basis. This might help to explain the apparent anomaly noted between the reported increased "delinquency" of athletic participants in general as they progress through high school and the reduced "deviancy" of the athletes rated as good during the same period. Finally, it should be noted that no attempt was made to validate the veracity of the subjects' responses to the self-response measure by, for example, administering a "fake scale" or

some measure of social desirability response characteristics in either of the two studies.

A series of studies by Segrave and his colleagues (Segrave, 1982; Segrave & Chu, 1978; Segrave & Hastad, 1982, 1984a) again confirmed the negative correlation between intervarsity athletic participation and delinquency among American high school students (and amongst a sample of elementary school, sixth-grade students [Hastad, Segrave, Pangrazi & Petersen, 1984]). The findings applied to both males (Hastad et al., 1984; Segrave, 1982; Segrave & Chu, 1978; Segrave & Hastad, 1984a) and females (Hastad et al., 1984; Segrave, 1982; Segrave & Hastad, 1982). In the main study (Segrave, 1982; Segrave & Hastad, 1982, 1984a) a series of questionnaires were administered to some 1900 high school students (roughly evenly split between males and females) from eight high schools (both public and private) within the greater metropolitan area of a major, northeastern American city. The questionnaires were designed to measure 13 variables, the criterion variable--self-reported delinquent behaviour--and 12 independent or predictor variables. The majority of the latter were rooted in basic sociological, theoretical approaches to delinquency and were labelled as follows: socioeconomic status; attachment to school; scholastic ability; perception of future strain; perceptions of limited opportunities; de-

linquent associates; peer status; exposure to dropouts; value orientations--both conventional and subterranean; boredom; self-concept; and interscholastic athletic participation. Athletic participation was defined as participation in at least one varsity or junior varsity interscholastic athletic program; it did not include intramural or community-based sport programs.

As noted, the researchers used a self-report measure of delinquency that enabled measurement of two aspects of the behaviour--a specific delinquent act or behaviour and the relative seriousness of the act/behaviour. The use of a self-report device provided the researchers with a measure of unofficial delinquency (which neither Schafer [1969] nor Landers and Landers 1978] had attempted and which Buhrmann et al., [1977, 1978] had only minimally achieved) and therefore represented the addition of an important methodological innovation to this area of delinquency research.

In terms of the main relationship between delinquency and athletic participation, athletes were found to report significantly less delinquent behaviour than non-athletes ($\chi^2(1, N = 1693) = 8.67, p = .003$). (Note: all statistics reported are taken from Segrave, 1982.) This relationship held for both males ($\chi^2(1, N = 853) = 11.99, p = .0005$) and females ($\chi^2(1, N = 804) = 10.64, p = .001$). Multiple regression analysis indicated that the three most important

variables related to delinquency for the athletes were: 1) delinquent associates (positively associated with delinquent acts); 2) attachment to school (negative association); and 3) subterranean value orientations (positive association) although all 12 independent variables contributed significantly to the variance ($p < .05$). For the non-athletes, the three most important variables were: 1) delinquent associates (positive); 2) subterranean value orientations (positive); and 3) conventional value orientations (negative). Ten of the 12 independent variables contributed significantly ($p < .05$), socioeconomic status and perceptions of limited opportunities did not display a statistically significant relationship. When broken down by gender, the three top-ranked variables remained the same as above for the male athletes and, interestingly, socioeconomic status alone of the 12 variables did not attain significance, while subterranean value orientations and conventional value orientations switched places for male non-athletes (all 12 variables reached significance). For the female athletes, the top three variables of importance were, in order of rank, attachment to school, delinquent associates and perceptions of future strain (positive); boredom alone, of the 12 IVs, did not attain significance. For the female non-athletes, delinquent associates and subterranean value orientation remained the two most important variables while

exposure to dropouts replaced conventional value orientations as the third most important variable (all 12 variables were significant).

The authors concluded, in the context of current sociological theory, that differential association theory and control theory provided the most powerful predictors of delinquent behaviour among their sample of male and female high school athletes and non-athletes. Interestingly, but not surprisingly (cf., Andrews et al., 1985), the one purely psychological variable in the study--self-concept--was relatively weakly related to delinquency and, according to the authors, in an unexpected direction, that is, positively associated with it (see Andrews, 1984 [August], for a detailed discussion of the relationship between self-concept/self-esteem, ties to subterranean and conventional value orientations and delinquency).

Other highlighted findings of the research of Segrave et al., included the following. In contrast to Landers and Landers (1978), Segrave and Chu (1978) found that a lower rate of delinquency was associated with athletic participation when compared to participation in other conventional (e.g., extra-curricular) activities, although there is some confusion concerning the definition of conventional activities used by Segrave and Chu. In support of Schafer (1969a, 1969b), Segrave and Chu found an association between

socioeconomic class (low) and rate of delinquency (high) and a reduction of delinquent behaviour for this group associated with athletic participation but, as noted above, the regression analysis of the subsequent main study (Segrave, 1982) found the relationship with socioeconomic status to be the weakest of all the variables significantly related to delinquent behaviour (see Andrews & Bonta, 1994, for a comprehensive review of the relationship, or lack thereof, between these two variables). The high school athletes exhibited less delinquent behaviour than the non-athletes regardless of the seriousness of the offence (Segrave, 1982; Segrave & Hastad, 1982). This relationship was particularly marked among the younger age groups of the sample. Participants in so-called major sports (i.e., those reflecting visibility and popularity: baseball, football, basketball and hockey for males; basketball, soccer, softball and volleyball for females) exhibited more delinquent behaviour and more serious delinquent behaviour than did those involved in minor sports (Segrave, 1982; Segrave & Hastad, 1982; cf., Buhrmann, 1977). Team and contact sport categories displayed a similar association when compared to individual and non-contact sports respectively. The number of seasons of sport participation was related to the delinquency rate of low socioeconomic status male athletes--the greater the involvement, the less delinquency reported for

this group (Segrave, 1982; Segrave & Hastad, 1982).

Finally, discriminant function analysis of the data from the main study suggested that the effect of intervarsity athletic participation on delinquency became more marked the more serious the offence, that is, athletic participation more effectively discriminated between delinquents and serious delinquents as opposed to discriminating between delinquents and non-delinquents (Segrave, 1982).

Not all investigations into the relationship of sport participation and delinquency have demonstrated the negative correlation one has come to expect. Malmisur and Schemp (1984) surveyed young males between the ages of 13 to 16 ($N = 203$) who attended four junior high schools in a midwestern American city of 45,000. Self-reported delinquency was the dependent variable, self-reported sport participation the independent variables. Multiple regression failed to demonstrate a statistically significant relationship between the variables. However, descriptive statistics reported by the authors are interesting when viewed in the light of the "self-selection" hypothesis. There was very little difference between the operationally defined delinquents and non-delinquents boys in terms of sports tried ($M = 2.88$ and $M = 2.86$ respectively), sports "made" ($M = 2.39$ and $M = 2.42$), sports "not made" ($M = 0.42$ and $M = 0.49$), sports quit ($M = 0.62$ and $M = 0.43$), and sports "kicked off" ($M = 0.01$ and M

= 0.02). The authors suggested that such data "...indicated an intense sport interest on the part of all these youth (p. 15)" (see also Smith, Adams & Cork, 1976, for confirmation of a general, universal interest in sport by young males). When one notes that the entire male population of the junior high schools participated in the study, such results call into question any effect of the self-selection hypothesis on athletic participation. Finally, one comment on the methodology of the study, the authors note a discrepancy between the total number of questionnaires completed and the actual number usable; unfortunately, they do not report a figure for the former leaving the reader with no information about the number of boys not included in the study.

Segrave, Moreau and Hastad (1985) investigated the relationship between delinquency and participation in one particular sport, namely, hockey (or in non-Canadian parlance: ice hockey). Heretofore in the literature, athletic participation, save for one sample, has been defined, if it has been defined at all, as a composite measure including a variety of varsity sports at the high school level within an American context. In this case, although the subjects were high school students (170 males between the ages of 15 and 16), the sport was not a varsity sport but rather consisted of participation on different teams at three levels of competitive minor hockey in a community and

a Canadian context. The three competitive levels consisted of: 1) local community; 2) inter-city; and 3) provincial. A statistically significant relationship between participation at any of the three levels of competition and delinquency in comparison to a group of non-athletes was not obtained.

There were measures of five independent variables (carrying on from Segrave et al.'s earlier work noted above)--attachment to school, delinquent associates, value orientations (subterranean and conventional), and perceptions of limited opportunities. Interestingly, self-reported delinquent behaviour of the athletes was significantly correlated with attachment to school (negatively) and to delinquent associates (positively) while the delinquent behaviour of the non-athletes was significantly correlated (positively) with delinquent associates only (all reported significance levels were at the $p < .001$ level). Even though the sport involved was extra-curricular to school activities and hence presumably did not contribute directly to school attachment, this variable was of equal importance to that of the influence of delinquent associates.

The final work I wish to make reference to in this section is a review of the relationship between sport and delinquency by Stark, Kent and Finke (1987). In a very brief recapitulation of the relevant literature dealing with the relationship, these authors interestingly cite only two

previous "worthwhile" empirical studies of the relationship, namely, Schafer (1969a) and Landers and Landers (1978). It is not clear whether Stark et al., considered the work by Buhrmann, Buhrmann and Bratton, and Segrave and his colleagues, all of which were published prior to the appearance of the Stark et al., chapter, to be somehow deficient and therefore not worthy of mention or whether, in fact, they were unaware of them. In any event, they made the point that in view of the "self-selection" problem and the doubt that the implications of its acceptance casts on the deterrent or rehabilitative value of athletic participation, a longitudinal research approach would be useful in order to more closely and definitively examine the sport-delinquency relationship and the issue of self-selection.

Stark et al., turned to a longitudinal data set available through the auspices of the Survey Research Center, University of Michigan. The data consisted of a sample of over two thousand males who were first contacted in 1966 when they were in the tenth grade. There were five waves of data collection over a subsequent eight year period (i.e., 1966 to 1974), corresponding roughly to the period between the ages of 16 to 24 in the lives of the respondents. Data on delinquency (self-reported) were collected in each wave. Data on varsity athletic participation were collected in the

third wave which coincided with the spring term of the subjects' senior year in high school. No statistically significant correlation between delinquency and sports participation was found upon subjecting the third wave of data to analysis. Surprised by this finding, the authors undertook further analysis (controlling for race). The lack of a significant correlation between the two variables held for the white youth of the sample but, amongst the black youth, it was found that athletic participants tended to be more delinquent than non-participants, that is, contrary to expectations based on the earlier literature there was a trend toward a positive correlation. Subsequent additional analysis correlating the first, third and fifth wave delinquency data with the third wave athletic participation for the black youth (i.e., taking a retrospective longitudinal approach) revealed that the correlational relationships between delinquency and sport participation moved from positive (significance was reached on five of the six delinquency scales) at age sixteen to essentially no correlation at age eighteen to negative at age twenty-four. (Note the similarity, in terms of trend, of this outcome to Buhrmann's (1977) data when comparing deviancy rates across grade levels for female high school student athletes in Iowa and Buhrmann and Bratton's (1978) findings relative to Alberta female students rated as good athletes).

At this point, the authors proposed that participation in high school sports, at least among the black youth of the sample, indicated "...a considerable degree of reform (p. 120)." Moreover they suggest that the "self-selection" effect was seemingly not present in that, at age sixteen, black sports participants were more delinquent than black non-participants. The authors postulated a social factors/personal factors interaction effect to explain these results. Because sport is a high profile, mainstream activity in the black community as a whole and may be perceived as an avenue to personal betterment in terms of potentially increased educational and professional opportunities (Rudman, 1986), sport participation is an option even for delinquent black youth; sport participation because of the salience of sport in the black community therefore has a moderating (i.e., social control) effect on individual delinquent behaviour. (It should also be noted that the data discussed herein were collected prior to the mandatory integration of schools in the U.S. therefore arguably increasing the relevance of the foregoing argument.)

Pursuing this line of reasoning, the authors proceeded to further examine the data collected on the white youths in the study in order to obtain a sample which would be representative of small town America where, it was hypothesized, high school sport remained an important and integral aspect

of community life, that is, an important social factor in the lives of the students. This, in contrast to the reduced visibility and social role of high school sport in the larger, urban, non-community-representative high schools which tend to be institutions of a more impersonal and less community-orientated nature. (Note that Buhrmann's [1977] data was sampled from a similar, small-town America population.) Results of the data analysis of this much smaller sample paralleled the trend (but not the initial magnitude of difference) displayed by the black-youth data. There was essentially no correlation between sport participation and delinquency at age sixteen, largely a negative relationship at age eighteen and a significant negative correlation at age twenty-four.

Again, Stark et al., considered these results to be evidence of a moderating, "reformatory" effect of sport participation and to be contrary to what would be expected were the "self-selection" effect operative. That is, the small town, sport-participating, white youth were equally delinquent in comparison to their non-participant peers at age sixteen. Moreover, in their opinion, these results further supported a social factors/personal factors interaction effect. Their analysis of the Survey Research Center's longitudinal data therefore suggested that: a) sport participation does have an inhibitory, deterrent or reha-

bilitative effect with regard to delinquent behaviour; b) an interaction between social conditions and personal attitudes may serve as an explanatory mechanism for the inhibitory effect; and c) "self-selection" may be, to a large degree, a manifestation of the lack of concurrence between congruent social and personal factors as opposed to serving as an alternative explanation of the deterrent efficacy of sport. According to the self-selection hypothesis as propounded by Yiannakis and colleagues, athletic participants are already primarily conformists with regard to the prevailing norms of society, any difference between sport participants and non-participants in terms of delinquent behaviour is simply a reflection of that tendency to conformity and not to the deterrent efficacy of, or the positive socialization role played by, sport; Stark et al., based on their analysis, reject this argument.

Issues/Findings to Date

Where does all this leave one in terms of attempting to unravel and understand the relationship of interest? What useful conclusions, generalizations or consistencies can one extract from the above work?

A recapitulation of the significant findings of the studies reviewed above indicates that the following relationships have been found to pertain:

- 1) A negative relationship between delinquent/deviant behaviour, whether measured by self-report data or by official juvenile court records, and participation in interscholastic sport (Buhrmann, 1977; Buhrmann & Bratton, 1978; Hastad, Segrave, Pangrazi & Petersen, 1984; Landers & Landers, 1978; Schafer, 1969; Segrave, 1982; Segrave & Chu, 1978; Segrave & Hastad, 1982, 1984; Stark, Kent & Finke, 1987);
- 2) Participation in interscholastic sport lessens the likelihood of involvement in delinquent behaviour of a serious nature (Segrave, 1982);
- 3) Male and female varsity athletes engage in less delinquency than male and female non-athletes (Segrave, 1983);
- 4) Deviancy/delinquency amongst athletes varies inversely with age (Buhrmann, 1977; Stark, Kent & Finke, 1987) and grade level (Buhrmann, 1977);
- 5) The negative relationship between delinquent behaviour and athletic participation will vary in strength depending upon the size of the community in which the school is located and therefore with the relative importance or visibility of the athletic event to the community in question (Stark, Kent & Finke, 1987).
- 6) Participation in popular sports (Buhrmann, 1977; Segrave, 1982), team sports and contact sports (Segrave, 1982) exhibits a positive relationship with delinquent/deviant behaviour;
- 7) The quality (Buhrmann & Bratton, 1978) and quantity (Buhrmann, 1977; Buhrmann & Bratton, 1978; Segrave, 1982; Segrave & Hastad, 1982) of athletic participation vary inversely with deviant/delinquent behaviour.

It would seem reasonable, as a logical and arguably overdue next step in the exploration of the relationship between athletic participation and delinquency, to attempt to replicate these findings, particularly so in a Canadian context in view of the preponderance of literature depicting

only the American experience. The complete spectrum of the organized sport experience needs to be examined in regard to the relationship rather than confining the investigation to only varsity sport participation. Community-based sport participation is at least equally representative of the norm of a Canadian adolescent's total sport participation experience and therefore equally important when considering its relationship with delinquency.

It would also be of value to assess those aspects or elements of the athletic experience thought of as important in the sport psychology literature and elsewhere in an attempt to establish which, if any, are relevant to the relationship of interest. Therefore sport motivation, sport satisfaction and sport enjoyment will be examined as well as general level of physical fitness and physical activity.

Thus this dissertation undertakes two kinds of research paradigms--specific hypothesis testing based on the extant literature and exploratory investigation (cf., Cohen, 1990) involving intuitively potential relevant variables. While ultimately, one is interested in a causal analysis of the relationship between sport participation and delinquency and of the even larger question of the role of sport participation in the socialization of youth, the present study will consist of a survey approach yielding essentially correlational data.

Methodology

General Outline

Robins (1990) noted that:

"A research project which sought to examine and control for all possible aspects of the relationship between participation in sports programmes and delinquency is theoretically possible, but it would necessarily be extremely complex and expensive, requiring a large sample and longitudinal design (p. 2)."

The current dissertation suffers from these same limitations in that both time and financial resources were modest. However, it was felt that a worthwhile research project using a survey, cross-sectional approach could be undertaken. To this end, a test battery of various paper and pencil instruments was developed and refined for use in this research (see Appendix A - the Instrument).

The criterion variables used were measures of self-reported delinquency and measures of participation in organized sport activities. In addition to examining the basic demographic variables suggested by the hypotheses noted in the previous section such as age and gender, data on other demographic variables considered to be of interest and relevance were collected. Several sport participation/sport involvement variables were examined. Variables emanating from the field of sport psychology dealing with the motivation for, with the satisfaction

gained from, and with the enjoyment experienced through, participation in sport were measured. Data were collected on the number and type of the students' leisure-time activities, on a self-report estimate of their level of physical fitness over each of the past twelve months and on the type, duration and intensity of physical activity (excluding organized sport) in which they were currently engaged.

Scales related to the delinquency side of the relationship included an assessment of one's personal attitudes, values and beliefs concerning the criminal justice system, a measure of the social support for delinquency in one's immediate environment and an assessment of four delinquency-related personality factors.

Lastly, a protocol measuring conventional values was administered as was a measure of response-set, the latter in an attempt to gauge a student's susceptibility to the social-desirability demand characteristics surrounding participation in the research project in general and, specifically, to providing responses to the more personally sensitive and revealing elements of the test battery itself.

The main operative hypothesis of the study, in its simplest form, is that athletic participation is negatively associated with self-reported delinquent behaviour. Additionally, this relationship should hold for both females

and males. Also, a series of subordinate hypotheses which follow from the main prediction and from the findings of the literature surveyed and noted in the preceding section are tested. Finally, several additional "intuitive" hypothesis are generated below in the detailed discussion of the instrument. Table 1 presents a summary overview of the variables examined, Appendix C a copy of the coding manual and scoring keys for the questionnaire and measurement scales used, Appendix B the measures of internal consistency and stability for the measurement scales, while the section following provides a detailed description of the instrument itself.

The Instrument

Criterion variables. The delinquency criterion variable--self-reported delinquent behaviour--was assessed by a 33 item questionnaire developed by Andrews and his colleagues (Andrews, Kiessling, Russell & Grant, 1979). The questionnaire samples a number of different criminal/delinquent activities of varying degrees of seriousness. Students responded to each item on a 5-point scale relative to the frequency of committal of a particular delinquent act ranging from "never", "not in the past year", "once in the past year", "twice...", or "three or more times over in the past year". In addition to assessing the

Table 1

Research Variables

- data were collected on each of the following variables at all schools except where noted.

<u>Criterion variable</u>	<u>Sport participation/sport involvement variables</u>	<u>Leisure activity variable</u>
- delinquent behaviour	<u>(continued)</u>	- how one liked to spend leisure time
<u>Sport participation/sport involvement variables</u>		<u>Demographic variables</u>
- participation in organized sport ("yes" or "no")	- reasons for not liking participation in organized sports (open ended) - 1 school only	- age
if answered "yes":	- stopped playing organized sports ("yes" or "no")	- gender
- number of organized sports played	- if yes, give reasons (open ended)	- school (rural or urban)
- number of years one has participated in each sport	<u>Derived sport participation variables:</u>	- grade
- number of hours per week involved in playing and practising each sport	- type/aspect of sport:	- level of instruction
- number of seasons of the year one is involved in organized sport(s) (3 of 4 schools)	- popular	- did one hold a job
- sponsor or location of organized sport (school or community)	- team	- if "yes": how many hours per week did one work
	- contact	

Table 1 (continued)

Research Variables

- data were collected on each of the following variables at all schools except where noted.

<u>Sport Psychology Variables</u> (3 of 4 schools)	<u>Delinquency Predictor Variables</u>	<u>Conventional Values Variable</u>	<u>Response Style Variable</u>
<ul style="list-style-type: none"> - sport motivation - aggression - conflict - competency - competition - cooperation - sport satisfaction - coach's leadership - personal outcome - sport enjoyment - intrinsic/process factors - extrinsic/product factors - social factors 	<ul style="list-style-type: none"> - delinquent sentiments - attitude toward courts - attitude toward law - attitude toward police - tolerance for law violation - identification with delinquent others - delinquent personality - psychopathy - neuroticism - inadequacy/immaturity - school maladjustment - social support for delinquency - delinquent others - thieves - aggressors - delinquent roles and models 	<ul style="list-style-type: none"> - value of education 	<ul style="list-style-type: none"> - social desirability
<u>Physical Fitness/Physical Activity Variables</u>			
<ul style="list-style-type: none"> - level of fitness/activity - duration of activity - intensity of activity 			

frequency of the behaviour, the scale also permits a measurement of the relative seriousness of the delinquent acts committed as well as a categorization of the behaviour into five groupings: 1) acts against persons; 2) acts against property; 3) acts involving substance abuse; 4) traffic offences; and 5) other delinquent acts (predominantly of a "white collar crime/delinquency" nature).

The athletic participation variables were measured by an expansion and adaptation of the questionnaire utilized by Segrave (1982). Subjects answered "yes" or "no" to the question: "Do you play organized sports?" A definition of the term "organized sports" was provided with the questionnaire in order to help the student understand and answer the question correctly (see Appendix A). The key defining criteria for an activity to be identified and included as an organized sport activity were that: 1) it be organized rather than "pick-up" or spontaneous; 2) the games or competitions be regularly scheduled, sanctioned events overseen by adults in the roles of coaches, officials, etc.; and 3) the games or competitions be regulated by a shared and accepted set of rules interpreted by independent officials in attendance at the event.

Sport participation/sport involvement. As part of the expanded athletic participation questionnaire, detailed

information was sought concerning the type and degree of sport involvement such as: the specific organized sport(s) played; the number of years one has played the sport; the number of hours per week involved in playing or practicing the sport; and the number of seasons of the year one was active in organized sport(s). From these data, information was also extracted concerning the nature or aspect of organized sport(s) in which a student was engaged (i.e., popular, team, contact). The expansion also involved the addition of several open-ended questions designed to capture descriptive data concerning positive and/or negative experiences encountered during one's involvement with organized sport: one's reasons for liking to be involved in organized sport; one's reasons for not liking organized sport; and one's reasons for having stopped playing organized sport if such was the case.

The criteria used to establish the three types/aspects of sport (or PTC variable components) noted immediately above followed from those used by Segrave (1982, pp. 77-79). Segrave's classification schema for popular sport was based on consultations undertaken with 10 physical education teachers and 10 non-physical education teachers employed in the schools from which his sample of students were drawn. Sports were judged to be popular based upon three criteria: 1) those which were considered to have the highest public

visibility; 2) those with the greatest prestige; and 3) those with the highest popularity. Contact sports were defined by Segrave (1982) as "...those sports whose rules permit or require physical contact between players, and in which, as a result, the risk of sustained physical injury is high....(p. 78)". Team sports were defined by Segrave as "...those sports in which several players give "opposition" to several other players (p. 78)".

One additional variable was obtained from the sport participation/sport involvement questionnaire. The questionnaire was adapted for the purpose of recognizing potential cultural differences between American and Canadian high school sport programs in terms of a student's experience with, and the emphasis placed upon, participation in varsity athletics (Jerome & Phillips, 1976). It could be argued that, in Canada, community-based athletics are at least equally representative of the norm of an adolescent's sport participation experience, that is, are every bit as important as varsity athletics when considering the effect sport participation has on the adolescent athlete's behaviour. To omit such participation from consideration would therefore be short-sighted and exclusionary.

Data were therefore collected on participation in non-school (i.e., community-based) organized sport programs as well as high school intervarsity sport(s). Thus, in

contrast to Segrave's work and other extant literature cited above which concentrated solely on the latter, the present study obtained information on all organized sport activity in which a student participated with a view to investigating whether the location (i.e., sponsorship by school or by community) of the sport activity was a factor in the relationship of interest.

Leisure activities. Students were asked to indicate how they liked to spend their leisure time (i.e., "free time"/"spare time"). Space was provided for them to list up to five leisure time activities. Appendix G contains the list of leisure time pursuits reported grouped by theme.

Demographic variables. A short, basic demographic data sheet was included in the test battery to gather information on each student concerning his or her age, gender, school attended (i.e., rural or urban), grade, level of instruction (i.e., advanced, general or blended) and whether or not one held a job and, if so, how many hours per week such employment consumed. Some of these variables are germane to the research findings outlined earlier, others (i.e., level of instruction and employment) were included as potential predictive factors of delinquency at the suggestion of interested teaching staff at the schools which participated in the study. It could be argued, for example, that one might expect more delinquency amongst general level students

in comparison with other students. Also, it would be interesting to determine whether there is a relationship between holding a job, the amount of time devoted to the job, and the level of self-reported delinquency.

Sport psychology. The following areas and variables emanating from the general field of sport and exercise sciences (Ostrow, 1990) were measured: 1) five aspects of *motivation* for participating in sport, that is, conflict, competition, competency, cooperation and aggression (Butt, 1979, 1987); 2) two aspects of *satisfaction* derived from participation in sport, namely, satisfaction with the coach's leadership and satisfaction derived from the personal outcome of one's athletic endeavours (Chelladurai, Imamura, Yamaguchi, Oinuma & Miyauchi, 1988); and 3) three aspects of *enjoyment* experienced from sport participation--intrinsic or process factors, extrinsic or product factors, and social factors (Wankel & Kreisel, 1985a, 1985b). In addition to having potential relevance to the relationship of interest, all of the above work has the added positive feature of having being developed and standardized with culturally relevant samples, that is, Canadian youth sport participants.

Butt (1979, 1987) has developed a model of sport motivation that would seem to have potential relevance to the relationship between sport participation and delinquent

behaviour. Her model, represented in Figure 2, posits four levels of motivation: the biological which provides the "life force" or energy responsible for initiating or underlying the desire to participate; psychological motivations which result in three styles of sport participation, namely, aggression, conflict and competence; social motivations which result in two styles of participation, competition and cooperation; and, lastly, a secondary reinforcement level which consists of a set of learned reinforcements, that is, the rewards of sport participation. These reinforcers are divided into two essential groupings--extrinsic rewards and intrinsic rewards.

Of particular interest are the psychological and social motivation constructs of Butt's model. Butt describes the three psychological motivations in the following manner:

On the psychological level an individual's energies may serve in the portrayal of three styles of sport motivation. These are aggression, conflict and competence....The constructs do not exhaust the psychological motivations for sport, but rather they cover the most important personal behaviours and styles which may be manifested on the sports field. The *aggressive* athlete has much energy and thus appears to be eager, active and impulsive. If frustrated the aggressive athlete is quick to find fault with others and may verbally or physically attack them. The *conflict* ridden athlete... is unhappy, often complaining, full of excuses and slow to fulfil his or her promise. When such athletes do achieve prominence their self-absorption and moods are often a bane to coaches and fellow athletes. The *competence* oriented athlete tends toward maturity and self insight. Intrinsic feedback from skill development and mastery

Figure 2

Sources of Sport Motivation

Note: Adapted from: Butt, D.S. (1979). Short scales for the measurement of sport motivation. *International Journal of Sport Psychology*, 10, 203-216.

lead to joy in sport. There is a constant seeking for new levels of excellence and new challenge (p. 205, 1979).

On the social motivation level, Butt defines the two relevant constructs as:

...*competition* in which motivation derives primarily from the desire to defeat others and *cooperation* in which others are seen as essential and appreciated partners in the sporting event or contest. The contest is seen by competitors as a chance for self-assertion and dominance over others while it is seen by cooperators as an opportunity for skill development and personal growth. The competitively motivated will have concerns of status and position when contesting and may be resentful and frustrated if thwarted. In contrast, the cooperative athlete will be found in good natured rapport with opponents after a win or a defeat and will show concern for the welfare of others (p. 205, 1979).

Butt further hypothesized that aggressive and conflict psychological styles are more likely to be related to competitive social motivation and external rewards whereas competence is more likely to be related to cooperative social motivation and intrinsic rewards. Given this model, it would be interesting to determine whether relationships exist in terms of a student athlete's categorization according to these variables and their level of self-reported delinquent behaviour. Based on the work of Orlick and his colleagues (Orlick, 1972, 1978a, 1978b, 1982; Orlick & Botterill, 1977) relating competitive versus cooperative approaches to play and games and the often negative social learning that occurs in the former approach compared to the positive, pro-social learning that is fostered by the

second, one would hypothesize that those who are motivated by an aggressive psychological style and a competitive social style would report more incidences of delinquent behaviour than would those motivated by a competency psychological style and a cooperative social style.

Chelladurai and his colleagues (1988), in the context of investigating the relationship between coaches' leadership styles and the cultural background of university level athletes, developed a measure of the degree of satisfaction experienced by the latter from participation in sport activities. The authors derived two factors related to satisfaction. One factor--the coach's leadership--relates to the athlete's perception of his or her interaction with the coach in terms of leadership provided, fairness of treatment, support and guidance given, the coach's teaching ability and his/her problem solving skills. A high degree of congruence between the coach's leadership skills/abilities with the athlete's preferences or expectations leads to a high degree of satisfaction with participation. The second factor revolves around the personal outcome of participating in terms of one's performance level, one's personal growth and development, and one's fitness level. Although the investigation of these two constructs in relation to athletic participation and delinquent behaviour is strictly exploratory in that

there is no guiding model or theory from which to derive hypotheses about the relationship, one might arguably expect a negative association between the degree of satisfaction experienced by a student athlete in his or her sport activities and their self-reported delinquent behaviour.

The work of Wankel and Kreisel (1985a, 1985b) is of interest in relation to providing the possibility of establishing a relationship between the factors involved in experiencing enjoyment from participation in sport and the level of self-reported delinquency. Drawing from a population of boys between the ages of seven and fourteen involved in youth sports in a major western Canadian city, these researchers identified three factors underlying the experience of enjoyment from sport participation. They denominated the factors as an intrinsic or process factor consisting of aspects of participation such as "the excitement of the sport", "personal accomplishment", "improving one's skills", "testing skills against others", and "just doing the skills"; an extrinsic or product (i.e., outcome) factor consisting of aspects such as "pleasing others", "earning rewards" and "winning"; and, lastly, a social factor consisting of "being on a team" and "being with friends". Wankel and Kreisel also found that the intrinsic or process factors were consistently rated by the youth-participants as being more important to their

experience of enjoyment than the extrinsic or product factors while the third, "social" factor consistently received ratings of intermediate importance in relation to the other two.

Again, as in the case of the sport satisfaction variable, while there is no guiding model from which to derive predictions regarding the relationship between sport enjoyment and delinquency, one might expect the two variables to be related insofar as participation in sport is related to delinquency as the literature suggests. That is to say, the more one enjoys participating in sport, the less delinquency one would be expected to exhibit. Furthermore, if the sport enjoyment profile uncovered by Wankel and Kreisel holds, one might expect the three factors to differ in the magnitude of their association with delinquency in the same manner as is their relative importance to the sport enjoyment construct.

Physical fitness/physical activity. Data were collected on students' general involvement in physical activity and level of physical fitness. An adaptation of a questionnaire developed by the Department of Athletics and Physical Recreation, Carleton University (Poole, 1994), was used for this purpose. Included in the information gathered was a self-reported estimate of one's level of physical fitness over each of the past twelve months and data on the

type, duration and intensity of physical activity currently engaged in (excluding organized sport). The reasoning underlying the collection of this data involved a variation of the hypothesis concerning the relationship between athletic participation and delinquency. The assumption made was that individuals who achieve and maintain a fairly high level of fitness may be less likely to engage in delinquent behaviour than those who do not.

Delinquency predictor variables (Psychology of Criminal/Delinquent Conduct). Andrews and his colleagues (Andrews, 1985 [May]; Andrews et al., 1985), building upon and consolidating the work of others, have developed a battery of paper and pencil tests of moderate-to-high reliability (see Appendix B, Table B-1) measuring personal attitudes, values, beliefs, personality traits and social influences which have been shown to be significantly associated with recidivism in a sample of male adult probationers (Andrews & Bonta, 1991) and with self-reported delinquent behaviour in samples of university undergraduate students (Hope, 1989; Morrison, 1982). One of the scales, entitled the Criminal (Delinquent) Sentiments Scale, measures attitudes, values and beliefs favourable to engagement in crime/delinquency; it consists of five subscales measuring: 1) attitudes toward the law; 2) attitudes toward the courts; 3) attitudes toward the police;

4) identification with criminal/delinquent others; and 5) tolerance for law violation. A second scale, the Criminal (Delinquent) Personality Scale, measures the relevant personality traits known to be associated with criminal and delinquent behaviour, that is, psychopathy, neuroticism, inadequacy-immaturity and scholastic maladjustment (Andrews & Bonta, 1991). The third scale, the Social Support for Crime (Delinquency) Scale, is a measure of the degree to which a student is exposed to social influences that favour and/or support delinquency, that is, to delinquent others (thieves and aggressors), to delinquents roles and to delinquent models. These three scales of the Andrews' assessment battery formed the delinquency predictor component of the instrument used in this study.

Conventional Values. A school-relevant measure of conventional success orientation (Value of Education Scale), also a component of the original Andrews' battery, served as the measure of a students identification with conventional values. This scale, of course, via a negative correlational relationship also serves as a delinquency criterion predictor (Andrews, 1985 [May]; Andrews et al., 1985). Segrave (1982) has shown conventional values to be among the two or three most important moderator variables related to self-reported delinquency amongst high school athletes and non-athletes regardless of gender.

Social desirability. A social desirability scale, an adaptation for a teenage population of the Social Desirability Scale for Children (Ford & Rubin, 1970) was administered in order to gauge the veracity (and therefore validity) of an individual's responses to the questionnaire battery, in particular, to the arguably self-revelatory delinquent behaviour scale. The instrument is a measure of general motivation to comply with social demands. Items in the scale refer to behaviours which are either culturally approved but infrequent in occurrence (e.g., "I always practice what I preach") or culturally disapproved but frequent in occurrence (e.g., "I sometimes break a promise"). Items are presented in pairs and subjects are forced to make a choice between them, for example: "I always..." paired with "I sometimes..." or "I sometimes..." paired with "I never...". The rationale for this method of presentation being that it reportedly offsets acquiescence bias (Ford, 1964).

Subjects

The participants in the study consisted of student volunteers ($N = 590$) drawn from the student bodies of four high schools located within an mid-sized eastern Ontario city and the surrounding rural area. Subjects were sampled from each of the five high school grades, that is, from grades 9 to 12

and from Ontario Academic Credit classes (OACs, formerly grade 13). The students ranged in age from 13 to 23 with the majority (582) being between the ages of 14 and 19.

Procedure

Three area school boards were approached for permission to conduct the research project in schools within their jurisdiction. The boards represented the public and separate schools of the county in which the aforementioned city is situated and the public school board of a neighbouring, rural county. Appendix D contains examples of the information provided to school board officials in support of the research project.

To gain access to a specific school it was necessary to obtain the permission of the school's principal once general approval for the research project had been obtained from the relevant school board (see Appendix D for an example of contact with the school principals). Six schools were approached, four granted access. Two of the schools (one public, one separate) serve an essentially urban population in a city having a greater metropolitan population of approximately 125,000. One of the schools (public) is located near the city's core, the other (separate) in a suburban setting. The two remaining schools (both public)

are located in a small town and in a village both within a fifty kilometre radius of the city.

Parental permission for the participation of those students under the age of majority was obtained. All student participants were requested to complete informed consent forms. Appendix D provides examples of the letters to parents and informed consent forms for both students and parents. The test battery was administered by the appropriate classroom teachers in three of the schools and by the investigator in the fourth school. Designated school liaison personnel and teachers were briefed by the investigator regarding the scope and purpose of the study and the protocol to be followed in the administration of the test battery. Students were encouraged to seek clarification from those administering the questionnaire as required. Students responded to the questionnaires anonymously. Test administration typically occurred during class periods assigned for the teaching of subjects such as English (all students are generally required to take English) in order to ensure, as far as possible, that a representative sample of the school was obtained. Completion of the questionnaire took approximately 45 to 50 minutes--the length of a typical class period. In each school, classes were sampled for each level of instruction, that is, advanced or general (applicable to grades 10 through 12

only) or blended. In three of the schools, samples were obtained for each grade, however because of time and other logistical constraints, the sample obtained from the fourth school included students from grades 11, 12 and the OAC level plus one student from grade 10 but no students from grade 9.

No significant difference in the gender make-up of the sample was found (females = 311, males = 276, $p > .05$, binominal 2-tailed test). Grade sample sizes in the combined-over-schools data ranged from 98 to 131 indicating that each grade was roughly equally represented numerically ($\chi^2(4, N = 588) = 5.76, p > .05$). There were significantly more advanced students ($n = 214$) than general students ($n = 117$) in the sample ($p < .001$, binominal 2-tailed test). The sample data for gender and level of instruction reflect the overall population make-up of the four schools involved based upon comparison with descriptive data provided by school authorities, that is to say, the gender split for each school approximates 50:50 while substantially more students are registered in advanced level courses than in general level courses in grades 10, 11 and 12. In comparison with the aforementioned descriptive population data provided, the research sample contains a proportionate representation of students at each of the grade levels from nine to 12, whereas the OAC level is over-represented.

Analysis of the sports participation data indicated that there were significantly more participants ($n = 318$) than non-participants ($n = 269$) in the sample ($p < .05$, binominal 2-tailed test). No data on the degree of athletic participation amongst high school school students generally were available with which to compare the sample for representativeness on this dimension. Segrave (1982) found more non-athletes than athletes (1030 versus 903) in his study but it must be remembered that his definition of "athlete" was restricted to high school varsity sports in contrast to the broader definition of "athletic participation" used herein.

Crosstabs evaluation of the two-by-two matrix summarizing the relationship between gender and sport participation revealed interesting and significant differences between males and females ($\chi^2(1, N = 584) = 21.99, p < .001$). More males reported themselves as participants as opposed to non-participants (178 versus 98 respectively, $p < .001$, binomial 2-tailed test) whereas the numbers were reversed for females (139 versus 169 respectively), however, the difference between participation and non-participation for the females was not statistically significant ($p > .05$, binomial 2-tailed test). Segrave's (1982) sample reflected a similar gender difference with 511 males reporting themselves as participants compared to 475

non-participants and 392 female participants versus 554 non-participants. Finally, the fact that there were more participants than non-participants in the male group of this study and in Segrave's study (1982) lends support to the conclusions reached by Malimur and Shemp (1984) regarding the popularity of, and interest in, sport exhibited by male students in a junior high school in the United States.

Treatment of the Data

Statistical analyses of the data collected was performed using SPSS 6.1 for Windows. The inputted data file was checked for accuracy of data entry and for missing data (Norusis, 1993a; Tabachnick & Fidell, 1989).

Five hundred and ninety-three (593) questionnaires were returned. Of this number, 3 protocols were discarded because the respondents did not take the exercise seriously and had provided obvious misinformation. This resulted in an attrition rate of less than 1%. In a relatively small number of the 590 cases screened into the data bank, responses to a particular variable (or variables) were found to be incomplete or missing. This fact did not automatically invalidate the entire protocol nor warrant it being discarded; inclusion of these cases, of course, resulted in the reporting of different *Ns* in subsequent statistical analyses depending upon the variables being

examined and whether pairwise or listwise approaches were being utilized.

The distributions of all continuous variables were examined for normalcy and where appropriate were transformed in order to render them more closely approximate to a normal distribution. In each subsequent statistical procedure employing one or more of these variables, both the raw data and the transformed data were examined separately through parallel analyses. Where the transformed data did not offer an useful improvement in terms of interpretability of results, only the raw data analyses results are reported.

Delinquency Criterion Variable. Because the test protocol used to measure the criterion variable, delinquent behaviour, contains items that solicit responses which may be considered to be of a disclosing, somewhat sensitive and self-revelatory nature, the relationship between it and the measure of response style, social desirability, was examined. The desire/need/pressure to present oneself in a good light was found to correlate with delinquency. Students' response styles are significantly and negatively correlated with overall reported delinquent behaviour ($r = -.29, p < .001$). That is to say, those students who scored higher on the social desirability scale reported less delinquent behaviour. It was therefore considered necessary to control for social desirability when examining the

relationship of the various actual and hypothesized predictor variables with the delinquency criterion variable.

Derivatives of the Delinquency Criterion Variable. As noted in the methodology section above, the delinquent behaviour scale is amenable to the measurement of the relative seriousness of the delinquent acts committed as well as allowing for their being grouped into five distinct categories: 1) acts against persons; 2) acts against property; 3) acts involving substance abuse; 4) traffic offences; and 5) other delinquent acts (predominantly of a "white collar" nature).

Seriousness of reported delinquent behaviour was assessed in the following way. Each of the the thirty-three items of the delinquent behaviour questionnaire was rated on a nine-point scale--the more serious the act, the higher the score assigned--by three raters, one female and two males, all of whom are experienced in the areas of both youth/adult corrections and forensic/correctional psychology (inter-rater reliability is presented in Table 2). Where unanimous agreement was achieved by the raters regarding the seriousness of an item (i.e., delinquent act), the item was assigned that value of the nine-point scale as its "seriousness" score; if there was disagreement, the item was assigned the median value (rounded) wherever possible, otherwise it was given the modal value. The median (or

Table 2

Seriousness Scale - Inter-Rater Reliability

	Final Scale Value	Judge "A" (Male)	Judge "B" (Female)	Judge "C" (Male)
Final Scale Value	1.0000	.8904	.8739	.8985
Judge "A" (Male)	--	1.0000	.7074	.7634
Judge "B" (Female)	--	--	1.0000	.7888
Judge "C" (Male)	--	--	--	1.0000

Multiple $R = .9717$

mode) was chosen as the more appropriate value in order to avoid the influence of extreme rater scores. Results of the rating exercise are as follows: unanimous agreement was achieved on three of the items; a spread of one interval on the nine-point scale occurred for eight of the items; a spread of two intervals for twelve of the items; a spread of three intervals for nine of the items; and a spread of 6 intervals for the remaining item. Table 3 presents a summary of the manner in which the 33 delinquency items were assigned "seriousness" scores. Table 4 presents a summary of the seriousness scale itself including delinquency scale item membership and an item frequency count for each of the seriousness levels, "1" being the least serious, "9" the most serious.

Table 5 summarizes the second approach to examining seriousness of delinquent behaviour: five groupings of delinquent acts were created based upon the nature of the behaviour involved. Each of the thirty-three items of the delinquent behaviour questionnaire were slotted into one of five groups representing different categories or types of delinquent behaviour. The categories are: acts against persons; acts against property; acts involving substance abuse; traffic offences and other delinquent acts (predominantly of a "white collar crime/delinquency" nature).

Table 3

Seriousness Ratings for the 33-Item Delinquent Behaviour Scale

ITEM	Judges' Ratings			MODE	MEDIAN	MEAN	FINAL SCALE VALUE
	Judge "A" (Male)	Judge "B" (Female)	Judge "C" (Male)				
1	5	6	5	5	--	5.33	5
2	7	9	8	--	8	8	8
3	2	2	2	2	2	2	2
4	2	8	2	2	--	4	2
5	5	8	7	--	7	6.67	7
6	9	9	8	9	--	8.67	9
7	7	7	7	7	7	7	7
8	6	7	5	--	6	6	6
9	7	6	5	--	6	6	6
10	4	3	2	--	3	3	3
11	4	6	5	--	5	5	5
12	8	9	7	--	8	8	8
13	9	7	7	7	--	7.67	7
14	7	4	4	4	--	5	4
15	5	2	2	2	--	3	2
16	3	2	1	--	2	2	2
17	6	6	3	6	--	5	6
18	8	9	7	--	8	8	8
19	2	1	1	1	--	1.33	1
20	5	5	3	5	--	4.33	5
21	3	1	2	--	2	2	2
22	5	6	5	5	--	5.33	5
23	1	1	4	1	--	2	1
24	6	7	7	7	--	6.67	7
25	4	2	3	--	3	3	3
26	4	2	3	--	3	3	3
27	4	3	1	--	3	2.67	3
28	5	7	4	--	5	5.33	5
29	3	2	3	3	--	2.67	3
30	5	4	2	--	4	3.67	4
31	3	5	2	--	3	3.33	3
32	6	6	6	6	--	6	6
33	4	6	4	4	--	4.67	4

Table 4

Seriousness Scale: Frequency of Delinquency Scale Items at Each of the Nine Levels of Seriousness

Level of Seriousness ^a	Item Numbers	Frequency
1	19,23	2
2	4,5,15,16,21	5
3	10,25,26,27,29,31	6
4	14,30,33	3
5	1,11,20,22,28	5
6	8,9,17,32	4
7	5,7,13,24	4
8	2,12,18	3
9	6	1

^a1 - least serious; 9 - most serious

Brief Description of Delinquent Behaviour Scale Items

1. Bribe/attempt bribe of officials	18. Set fire to a building
2. Used force to get money/valuables	19. Participated in illegal gambling
3. Bought beer/wine/liquor while minor	20. Stolen things (worth \$5 to \$200)
4. Sold illegal drugs (not marijuana. or hashish)	21. False alarms (fire, ambulance, etc.)
5. Carried razor, switch-blade or gun	22. Reckless driving/speeding
6. Attacked someone with intent to injure	23. Trespassing
7. Taken part in gang fight	24. Threat harm or injury
8. Stolen things worth more than \$200	25. Stolen things (less than \$5)
9. Break and entering	26. Possession. of stolen goods
10. Poss. of marijuana or hashish	27. Cheated on exams/assignments
11. Joyriding	28. Impaired driving
12. Forced sex/forced attempted sex	29. Creating a disturbance in public
13. Started a fist fight unprovoked	30. Drug possession (ex. marijuana or hashish)
14. Purposefully damaged property	31. Sold beer, wine, liquor to minors
15. Driven car without license	32. Automobile theft (not joyriding)
16. Given false information.	33. Obtained money, etc., via false pretence
17. Sold marijuana or hashish	

Table 5

Delinquent Behaviour Scale Items Grouped Into Five Different Categories

Group	Delinquency Scale Items	Average "Seriousness" Value of Items in Group
Acts against person	2,5,6,7,12,13,24	7.57
Acts against property	8,9,11,14,18,20,25,26,32	5.11
Traffic offenses	15,22,28	4.00
Drug and alcohol offenses	3,4,10,17,30,31	3.38
Other	1,16,19,21,23,27,29,33	2.63

Categories of Delinquent Behaviour: Scale Item MembershipActs Against Persons

- 2. Used force to get money/valuables
- 5. Carried razor, switch-blade or gun
- 6. Attacked someone/intent to injure
- 7. Taken part in gang fight
- 12. Sex or attempted sex via force
- 13. Started a fist fight unprovoked
- 24. Threatened harm or injury

Acts Against Property

- 8. Stolen things worth more than \$200
- 9. Break and entering
- 11. Joyriding
- 14. Purposefully damaged property
- 18. Set fire to a building
- 20. Stolen things (worth \$5 to \$200)
- 25. Stolen things (less than \$5)
- 26. Possession of stolen goods
- 32. Automobile theft (not joyriding)

Traffic Offences

- 15. Driven car without license
- 22. Reckless driving/speeding
- 28. Impaired driving

Drug and Alcohol Offences

- 3. Bought beer/wine/liquor while minor
- 4. Sold illegal drugs (not mar. or hash)
- 10. Possession of marijuana or hashish
- 17. Sold marijuana or hashish
- 30. Drug possession (ex. mar. or hash)
- 31. Sold beer, wine, liquor to minors

Other Types of Offences

- 1. Bribe/attempt bribe of officials
- 16. Giving false information
- 19. Participated in illegal gambling
- 21. False alarms (fire, ambulance, etc.)
- 23. Trespassing
- 27. Cheated on exams/assignments
- 29. Creating a disturbance in public
- 33. Obtained money, etc., via false pretence

Sport Participation Predictor Variables. Three sport participation variables were created. The first--general sport participation--is a dichotomous variable. It is simply the measure of whether a student was or was not a participant in organized sport. The second--participation in varsity sport--is a four-level, discrete variable dividing organized sport participants into three groups based upon the location/sponsorship of the sporting activity. The three groups are: 1) participants in high school varsity sports only; 2) participants in community-based organized sports; and 3) participants in both high school varsity sports and in community-based organized sports, that is, the "mixed" group. The fourth level of the variable represents the non-participants. A detailed description of the third sport participation variable follows.

Popular/Team/Contact (PTC) Sports Participation. Participation in popular, team and contact sports has been reported to correlate positively with higher rates of delinquent/deviant behaviour (Buhrmann, 1977; Segrave, 1982). Following Segrave's definitions (see above) a predictor variable measuring these aspects of sport participation was created. The PTC variable is a dichotomous variable; either an athlete participated exclusively in a sport which was characterized as a popular and/or contact and/or team sport

or they participated in sports not so classified. Non-participants were also included in this latter category. A summary of the three PTC variable components is presented in Table 6. (A complete listing of all sports reported by the subjects is found in Table E-1 of Appendix E.)

In Segrave's study, hockey, baseball, football and basketball were classified as popular sports for the male students while softball, basketball, soccer and volleyball were so designated for the females. The same sports plus soccer constituted the popular sport category for the males of this study. Baseball replaced softball as one of the sports making up the popular category for the females (only four students--two males and two females--reported participating in softball as an organized sport). In addition, "athletics", consisting of both track and field events and cross country running, was added for the female group. Table 7 presents a comparison of the sports making up the popular category of Segrave's study and the present study. Frequency counts are also provided. The cut-off point used for the inclusion of a sport in the popular category was thirty participants.

In the Segrave study, basketball, boxing, football, ice hockey, lacrosse, soccer and wrestling constituted the contact sports for the males whereas basketball, ice hockey and soccer comprised the group of contact sports for the

Table 6

PTC Sports^a

Popular		Contact		Team	
Male	Female	Male	Female	Male	Female
Hockey	Baseball	Hockey	Hockey	Hockey	Hockey
Baseball	Basketball	Football	Basketball	Baseball	Baseball
Football	Soccer	Basketball	Rugby	Football	Football (Touch)
Basketball	Volleyball	Rugby	Soccer	Basketball	Basketball
Soccer	Athletics ^b	Soccer	Field Hockey	Rugby	Rugby
		Wrestling	Ringette	Soccer	Soccer
		Boxing	Wrestling	Volleyball	Volleyball
		Judo/Karate	Judo/Karate	Softball	Field Hockey
		Field Hockey		Field Hockey	Ringette
					Softball
					Broomball

^aThe list of sports contained in this table are not intended to be exhaustive or conclusive, only those sports reported in the study have been included and classified. See Appendix E for the complete list of sports reported.

^b“Athletics” includes participants in the cited sports of “track & field” and “cross country”.

Table 7

Popular Sports

Popular Sport Category 1 ^a				Popular Sport Category 2 ^b			
Males		Females		Males		Females	
Sport ^c	Frequency ^d	Sport ^c	Frequency ^d	Sport ^c	Frequency ^d	Sport ^c	Frequency ^d
Baseball	96	Baseball	58	Baseball	96	Baseball	58
Hockey	71	Volleyball	47	Hockey	71	Volleyball	47
Basketball	51	Soccer	43	Soccer	54	Soccer	43
Football	34	Basketball	42	Basketball	51	Basketball	42
				Football	34	Athletics ^e	37

^aPopular sport category following the classification system used by Segrave (1982).

^bPopular sport category incorporating the 5 most frequently played sports for each gender as reported by the subjects of the current study - the frequency cut-off score used for inclusion in the category was 30.

^cSports are listed in order of frequency of participation as cited by the subjects of the current study.

^dFrequency refers to the number of students who reported participating in a particular sport.

^e"Athletics" includes participants in the cited sports of "track & field" and "cross country".

females. The number of sports reported in Segrave's study and the present study differ. Correspondingly, some sports reported by the student athletes of Segrave's study were not reported here (e.g., lacrosse) and vice versa (e.g., ringette). Therefore the lists of sports deemed to be contact sports also differ. Based on the definition cited earlier, however, the reported sports classified as contact sports for males in the present study are hockey, rugby, football, basketball, soccer, wrestling, boxing, judo/karate and field hockey whereas hockey, soccer, basketball, field hockey, ringette, rugby, wrestling and judo/karate made up the contact sports category for the females (Table 6).

Sports classified as team sports in the Segrave study were baseball, basketball, football, ice hockey, lacrosse, soccer and volleyball for the males and basketball, field hockey, ice hockey, lacrosse, soccer, softball and volleyball for the females. Again, because of the differences between the two studies in terms of the number and kind of sports reported, the lists of sports deemed to be team sports also differ. In the present study hockey, baseball, football, basketball, volleyball, rugby, soccer, softball and field hockey were designated as team sports for the males, while for the females, team sports included those listed for the males with the exception of football but with

the addition of touch-football, ringette and broomball (Table 6).

Quantity of Athletic Participation. The literature indicates that both the quality (Buhrmann & Bratton, 1978) and quantity (Buhrmann, 1977; Buhrmann & Bratton, 1978; Segrave, 1982; Segrave & Hastad, 1982) of athletic participation are related to deviant/delinquent behaviour. The present study did not examine the quality of the students' athletic participation. Quantity, however, was measured in several ways: 1) the number of organized sport(s) in which a student participated; 2) the number of years she/he has played the sport(s); 3) the number of hours per week involved in playing or practicing the sport(s); and 4) the number of seasons of the year one was active in the sport(s). (Data for this latter variable were collected on the athletes in three of the four schools only.) Thus a detailed profile was captured of the sport participants' involvement in organized sport on a weekly, seasonal and yearly basis.

Table 8 presents the zero correlation matrix for the sport quantity variables. The four scales correlate with one another at the .001 level of probability or beyond. This suggests that, to a large degree they are measuring a common aspect of sport participation which, for the purposes of this study is termed "quantity of sport participation".

Table 8

Zero Order Correlation Matrix of Sport Quantity Variables

Variable	Number of Sports Played	Number of Years Involved	Hours Per Week Involved	Number of Seasons Per Year ^a
Number of Sports Played	---	.6973*** (N = 316)	.6125*** (N = 311)	.6117*** (N = 199)
Number of Years Involved	.6973*** (N = 316)	---	.4866*** (N = 310)	.4644*** (N = 198)
Hours Per Week Involved	.6125*** (N = 311)	.4866*** (N = 310)	---	.4233*** (N = 196)
Number of Seasons Per Year	.6117*** (N = 199)	.4644*** (N = 198)	.4233*** (N = 196)	---

Age. A preliminary investigation of the relationship between age and the primary criterion variable, overall delinquency within the past year, was undertaken via a one-way ANOVA with a six-level age variable (Table 9). The six age groups are: 14, 15, 16, 17, 18, and 19 years of age. Age was seen to be a significant predictor of overall delinquency ($F = 3.728$, $p < .01$). A multiple range test (least significant difference, p set at .05) indicated that the 16-, 17-, 18- and 19-year olds exhibit significantly more delinquency than the 14-year old group while the 17- and 19-year olds exhibit significantly more delinquency than the 15-year olds. There was no significant difference between the 14- and 15-year old groups on the one hand, nor between the 16-, 17-, 18-, and 19-year olds on the other. With the exception of the 18-year olds, there is a smooth, increasing linear progression of level of delinquency over the age groups ($\eta^2 = .178$, $p < .01$). Table 9 also presents the ANCOVA results for age and delinquency with social desirability introduced as a covariate. Again, age is seen to be a significant predictor of delinquency ($F = 3.312$, $p < .01$; $\beta = .17$). The adjusted delinquency means suggest a natural split of the age groups into two, rather than six, groups. It was therefore decided, for ease of statistical analysis and interpretability of results, to reduce the age variable to a two-level, dichotomous variable, one level

Table 9

Age and Overall Delinquency

Delinquent Behaviour	Age					
	14	15	16	17	18	19
ANOVA Observed Means	9.09	11.68	14.53	15.63	13.71	18.59
(N = 576)	79	123	107	106	130	31
<i>Eta</i>	.18*					

ANCOVA Adjusted Means ^a	9.28	11.49	14.62	15.81	13.50	18.82
(N = 546)	74	116	102	99	126	29
<i>Eta</i>	.16*					
<i>Beta</i>	.17*					

* $p < .01$.

ANOVA and ANCOVA Population Means = 13.41.

ANCOVA Multiple $R = .335$; ANCOVA Multiple $R^2 = .112$.^aAdjusted for the covariate.

consisting of the 14- and 15-year old students, the other level the remaining four, older age groups.

Location of School (Rural/Urban). The hypothesis concerning school location and its relationship to sport participation and delinquency was examined in terms of a dichotomous variable: urban versus rural school settings. Four high schools were sampled. One is located in a village with a population of less than 1,000 inhabitants (school A). A second in a small town with a population of approximately 2,000 (school B). Both school A and school B draw their students from primarily rural and village catchment areas, therefore the data gathered from these two schools formed the "rural" level of the location-of-school variable. A third school is located in the city's suburban area (school C) while the fourth school is near the downtown area of the city (school D). The data from these schools were combined to form the "urban" level of the location-of-school variable.

Physical Fitness/Physical Activity. Three physical fitness and physical activity scales were initially used to measure this construct: 1) a self-reported estimate of one's level of physical fitness (on a five-point scale) over each of the past twelve months; 2) data capturing the duration in hours of physical activity engaged in over the past two weeks excluding participation in organized sport activities;

and 3) data on the intensity of physical activity engaged in over the past two weeks, again, excluding organized sport activities. The intensity of reported physical activity was captured by a three-level variable. Students could describe their involvement in physical activities as light, moderate or heavy. These data were collected in three of the four high schools. A complete list of the various physical activities reported by the students is found in Appendix F.

Table 10 provides the zero order intercorrelation matrix of the three scales. Two of the variables, continuous in nature--level of physical fitness and duration of physical activity--correlate significantly and positively ($r = .1591$, $p < .01$). The third variable, intensity of physical activity, does not correlate significantly with the other two and, in the sense of the three measuring a unitary construct, seems to stand alone. It was therefore decided to drop the latter as a measurement of the physical activity/physical fitness construct.

Data Analysis. The data gathered through the research protocol outlined above resulted in two types of "predictor" variables: dichotomous and continuous. The criterion variables are all, of course, continuous in nature. The effects of the dichotomous predictor variables were assessed via several analyses of covariance (ANCOVAS) and two multivariate analyses of covariance (MANCOVA) (see Appendix H for

Table 10

Correlation Matrix^a: Physical Fitness and Physical Activity Variables

Physical Fitness and Physical Activity Variables			
	Level of Physical Fitness	Duration of Physical Activity	Intensity of Physical Activity
Level of Physical Fitness	---	.1591* (N = 276)	.0871 (N = 270)
Duration of Physical Activity	.1591* (N = 276)	---	.0327 (N = 284)
Intensity of Physical Activity	.0871 (N = 270)	.0327 (N = 284)	---

* $p < .01$.^aPairwise, zero order correlation coefficients.

the ANCOVA output tables). The list of variables included in each of the ANCOVAs and the MANCOVAs is presented in Tables 11 and 12 respectively. A bivariate, zero order correlation matrix of these variables is also included in Appendix H (Table H-1).

Each ANCOVA analyzes a different segment of the student population--the total student sample and only the athletes (or sports participants) of the sample--and the three types of sport participation. In each case, a simple factorial ANCOVA design was utilized in order to utilize the multiple classification analysis option of the SPSS 6.1 program (Norusis, 1993a; SPSS, 1993). Relationships with the criterion variable were assessed by the experimental method (Norusis, 1993a; SPSS, 1993). With this method, the effect of the covariate(s) is assessed first, the effect of each predictor variable is then assessed and adjusted for the the covariate effect and the other main effects, and finally the interaction effects are assessed and adjusted for all interaction effects of the same and lower order as well as for all main effects and the effect of the covariate. Multiple classification analysis tables were produced wherein "...effects are expressed as deviations from the grand mean....(Norusis, 1993a, p. 289)" and eta and beta statistics are provided. The eta statistic provides a measure of correlation (observed means) between a predictor

Table 11

Data Analyses: Analyses of Covariance (ANCOVAs)

- 1) Total Sample - separate ANCOVA for each type of sport participation.
- 2) Athletes-Only Sample - one ANCOVA only (PTC sport participation).

<u>Criterion Variables</u>	<u>Predictor Variables - Sport Participation</u>	<u>Other Predictor Variables</u>	<u>Covariate</u>
Overall Delinquent Behaviour Within Last Year	1) Participation in Organized Sport - General 2) Exclusive Participation in Varsity Sport(s) 3) Exclusive Participation in Popular and/or Contact and/or Team Sport(s) (PTC)	1) Gender 2) Age 3) Location of School (Rural/Urban) 4) Level of Instruction 8) Employment	Social Desirability

Table 12

Data Analyses: Multivariate Analyses of Covariance (MANCOVA)

1) Total Sample - separate MANCOVA for each type of sport participation.

<u>Criterion Variables</u>	<u>Predictor Variables - Sport Participation</u>	<u>Other Predictor Variables</u>	<u>Covariate</u>
1) Seriousness of Delinquent Behaviour	1) Participation in Organized Sport - General	1) Gender	Social Desirability
2) Offences Against Persons	2) Exclusive Participation in Popular and/or Contact and/or Team Sport(s) (PTC)	2) Age	
3) Offences Against Property		3) Location of School	
4) Substance Abuse Offences		4) level of Instruction	
5) Traffic Offences		5) Employment	
6) Other Offences			

variable and the criterion variable. It does not assume a linear relationship between the two. The *beta* statistic serves the same purpose for the adjusted means.

Two MANCOVAS were run, one for each type of sport participation, as noted in Table 12. The unique sum of squares MANCOVA model was used. This model option "...uses the regression method to partition sum of squares....Each effect is adjusted for all other effects in the model (Norusis, 1993b, p. 101)". Only main effect terms were examined in the model.

The relationship between the continuous predictor variables and the criterion variables were assessed by partial correlation techniques. Initially, bivariate zero order correlations were obtained for all forty-two variables. Those variables which correlated significantly with one or more of the criterion variables and with the continuous predictor variable of interest, that is, intervening or moderator variables, were subsequently partialled out when the relationship of interest was examined. Table 13 provides a list and description of the continuous predictor variables.

Table 13

Data Analysis: List of Predictor Variables of a Continuous Nature

<u>A. Measures of Sport Participation - Quantity</u>	<u>F. Physical Fitness/Physical Activity</u>
1) Number of Sports in Which One Participates	1) Estimate of Physical Fitness/Physical Activity over Past Twelve Months (Fitness Level)
2) Number of Years of Participation in Organized Sport(s)	2) Number of Hours Engaged in Physical Activity (Not Organized Sport) during Past 14 Days (Duration of Physical Activity)
3) Number of Hours Per Week Spent in Playing and Practising Organized Sport(s)	
4) Number of Seasons of the Year during Which One Participated in Organized Sport(s)	<u>G. Delinquent Sentiments</u>
<u>B. Employment</u>	1) Law
1) Number of Hours Per Week Employed (Job Hours)	2) Courts
	3) Police
<u>C. Sport Motivation</u>	4) Tolerance of Law Violation
1) Aggression	5) Identification with Delinquent Others
2) Conflict	
3) Competence	<u>H. Delinquent Personality</u>
4) Competition	1) Psychopathy
5) Cooperation	2) Neuroticism
<u>D. Sport Satisfaction</u>	3) Inadequacy/Immaturity
1) Leadership Style of Coach	4) Scholastic Maladjustment
2) Personal Outcome	
<u>E. Sport Enjoyment</u>	<u>I. Social Support for Delinquency</u>
1) Intrinsic or Process Factors	1) Ties to Delinquent Others
2) Social Factors	1a) Thieves
3) Extrinsic or Product Factors	1b) Aggressors
	2) Delinquent Resources and Models
	2a) Resources
	2b) Models
	<u>J. Conventional Values</u>
	1) Value of Education

Results

Delinquent Behaviour

Tables 14 and 15 provide summaries of the amount and type of delinquent behaviour reported by the students. Note that, in Table 14, the difference in mean scores between the two amounts of delinquency committed, that is, the total amount of delinquency ever and total amount of delinquency within the last year is, to a large degree, an artefact of the scoring systems used--delinquent acts committed prior to the past year are coded "0" for the "within last year" data whereas such acts are coded "1" for the "ever" data. The correlation between the two criterion measures is $r = .99$ indicating a high degree of agreement. For this reason, the measure of overall delinquency used hence forward will be the amount of delinquent behaviour committed within the last year--the measure of most recent delinquent behaviour and therefore the more relevant guage of the criterion variable.

Not surprisingly, the sample does not represent a severely or seriously delinquent population. This is illustrated by the fact that the average delinquency score in Table 13 for acts occurring in the past year (males and females combined) was 13.34 ($SD = 14.70$); the maximum

Table 14

Self-Reported Delinquent Behaviour

	Delinquent Behaviour	
Statistic	Ever	Within Last Year
M	22.68	13.34
SD	21.24	14.70
Range	0 - 120	0 - 88
Maximum Possible Score	132	99
N	582	

obtainable score for each subject was 99. Similarly, Table 15 provides a breakdown by gender of the subjects' responses to each item of the self-reported delinquency scale. In only one instance of the 99 entries in the table--that is, males responding to item 3: "underage access to alcohol"--do over half of the respondents indicate that they have committed a delinquent act.

This is not to say, however, that few of the students in the sample admitted to having engaged in some form of delinquent behaviour. On the contrary, 87.8% of the subjects (85.1% of the female students, 91.1% of the male students) reported having been involved in some form of delinquent behaviour, as defined by the study's research protocol, during the past year.

Participation in Organized Sport and Self-Reported Delinquent Behaviour

General Sport Participation. The main hypothesis of this study, generated from the relevant extant research, is that participation in organized sport is negatively associated with delinquent behaviour; that such participation, in effect, serves to reduce or inhibit involvement in delinquency. The results of the basic ANCOVA test of this hypothesis--overall delinquent behaviour the criterion variable, participation in organized sport, "yes"

Table 15

Rates^a of Self-Reported Delinquency^b by Gender and Type of Behaviour

ITEM ^c	FEMALES	MALES	COMBINED
1. Bribe/ attempt bribe of officials	1.30	6.64	3.95
2. Used force to get money/valuables	2.61	11.81	7.06
3. Bought beer/wine/liquor while minor	43.53	55.93	48.88
4. Sold illegal drugs (not mar. or hash)	4.22	10.70	7.39
5. Carried razor, switch-blade or gun	4.87	16.67	10.50
6. Attacked someone/intent to injure	6.17	16.61	11.34
7. Taken part in gang fight	1.62	8.86	5.16
8. Stolen things worth more than \$200	2.29	7.38	4.83
9. Break and entering	2.29	11.99	6.77
10. Possession of marijuana or hashish	21.10	36.67	28.40
11. Joyriding	11.36	24.16	17.24
12. Sex or attempted sex via force	0.98	4.46	2.59
13. Started a fist fight unprovoked	11.08	22.22	16.38
14. Purposefully damaged property	12.70	30.26	21.00
15. Driven car without license	25.33	35.79	30.24
16. Giving false information	9.74	20.74	14.97
17. Sold marijuana or hashish	5.84	17.34	11.34
18. Set fire to a building	0.00	5.64	2.60
19. Participated in illegal gambling	9.10	33.58	20.62
20. Stolen things (worth \$5 to \$200)	30.72	35.93	33.16
21. False alarms (fire, ambulance, etc.)	11.77	19.93	15.69
22. Reckless driving/speeding	29.09	43.33	35.75
23. Trespassing	24.35	44.61	33.97
24. Threatened harm or injury	22.08	40.59	30.76
25. Stolen things (less than \$5)	23.61	31.73	27.29
26. Possession of stolen goods	22.48	40.74	31.21
27. Cheated on exams/assignments	39.29	43.17	41.24
28. Impaired driving	12.99	24.07	18.24
29. Creating a disturbance in public	25.33	37.78	31.15
30. Drug possession (ex. mar. or hash)	9.45	19.63	14.31
31. Sold beer, wine, liquor to minors	9.45	22.96	15.86
32. Automobile theft (not joyriding)	0.65	1.85	1.21
33. Obtained money, etc. via false pretence	27.04	35.19	31.03
Number of respondents	308	271	582 ^d

^aRates for a particular item are expressed as a percentage of number of respondents.

^bDelinquent acts committed one or more times within the last year.

^cStatements below are shortened versions/examples of actual questionnaire items.

^d582 students completed the delinquent behaviour questionnaires, however three of these individuals did not specify gender on their protocols.

or "no", the predictor variable and social desirability the covariate--are presented in Tables 16a and 16b. From Table 16a it is noted that participation in organized sport is a statistically significant predictor of delinquent behaviour ($F = 5.778$, $p < .05$). From Table 16b it is noted that athletic participation is significantly associated with *increased* levels of delinquent behaviour, not the expected direction of the association. This relationship applies when one considers the unadjusted means ($\eta = .11$, $p < .01$, section one of the table) and the adjusted (for the covariate) means ($\beta = .10$, $p < .05$, section two of the table). Moreover, examination of the total sample ANCOVA results (Appendix H - Table H-2), which includes the additional predictor variables noted in the treatment-of-the-data section above, also supports the finding that athletic participation is a statistically significant predictor of *increased* rates of delinquency ($F = 4.493$, $p < .05$, $\beta = .09$). The third section of Table 16b presents the adjusted delinquency means for this analysis.

Varsity-Only Sport Participation. As noted earlier, the extant research examining the relationship between athletic participation and delinquency amongst adolescents has focused almost exclusively upon high school, intervarsity sport. The present study attempted to look at sport participation amongst youth from a wider optic, that

Table 16a

General Participation in Organized Sport and Overall Delinquent Behaviour - ANCOVA Table

EXPERIMENTAL sums of squares
Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariates					
SOCDESIR	10180.067	1	10180.067	51.258	.000
Main Effects					
SPORPART	1147.556	1	1147.556	5.778	.017
Explained	11327.624	2	5663.812	28.518	.000
Residual	108636.815	547	198.605		
Total	119964.438	549	218.514		

Multiple $R = .307$. Multiple $R^2 = .094$.

Table 16b

General Participation in Organized Sport - Overall Delinquency Means

Delinquent Behaviour	General Participation in Organized Sport	
	No	Yes
Observed Means	11.55	14.91
Ns	267	313
<i>Eta</i>	.11**	

Adjusted Means ^a	11.83	14.73
Ns	259	291
<i>Beta</i> ^a	.10*	

Adjusted Means ^b	12.03	14.54
Ns	253	289
<i>Beta</i> ^a	.09*	

* $p < .05$; ** $p < .01$.

^aAdjusted for the co-variate.

^bAdjusted for the co-variate and the other predictor variables.

is, inclusive of all organized sport in which an individual is involved. The student athletes were therefore assigned to three different organized sport participation groups based upon sponsorship or location of the sporting activity in order to examine any difference that may exist between them in regard to rates of delinquency. The three groups are varsity-only, community-based only or mixed.

The results of the total sample ANCOVA (Appendix H - Table H-3) for this variable indicate that the groups (including a fourth group, the non-participant group) do differ in mean levels of reported delinquency ($F = 2.285$, $p < .10$, $\beta = .10$). However, in terms of membership in one group being a better predictor of delinquency than any of the others, the differences between the groups do not reach statistical significance (Scheffe multiple range test, p set at .05).

Table 17 presents the observed mean delinquency means of the four groups as well as the adjusted-for-the-covariate delinquency means and the overall adjusted (i.e., for the covariate and the other predictor variables) delinquency means. There is an interesting and consistent progression in delinquency means over the three sport participation groups with the varsity-only group displaying the least amount and the "mixed" group displaying the most. In fact, the adjusted delinquency means of the varsity-only group are

Table 17

Location/Sponsorship of Sport Participation - Overall Delinquency Means

Delinquent Behaviour	Location/Sponsorship of Sport Participation				
	Non-Participants	Varsity Only	Community Only	Mixed	<i>Eta/Beta</i>
Observed Means	11.55 <i>N</i> = 267	12.53 <i>N</i> = 47	14.84 <i>N</i> = 102	15.50 <i>N</i> = 160	.12**
Adjusted Means ^a	11.82 <i>N</i> = 259	11.47 <i>N</i> = 40	14.44 <i>N</i> = 100	15.63 <i>N</i> = 147	.12**
Adjusted Means ^b	12.00 <i>N</i> = 253	11.76 <i>N</i> = 40	14.40 <i>N</i> = 99	15.27 <i>N</i> = 146	.10*

* $p < .10$; $p < .05$.

^aAdjusted for the co-variate only.

^bAdjusted for the co-variate and the other predictor variables.

almost identical with those of the non-participant group.

Given the aforementioned trends in delinquency means between the three sport participant groups, and between the varsity-only group and the non-participant group, as well as the fact that the existing research, which has claimed to find a negative relationship between delinquency and sport participation and has essentially dealt with varsity-only athletes, it was considered worthwhile to take a closer look at the make-up of this group in terms of the other predictor variables. Of the 40 students in the group, 21 are female and 19 are male; 14 are in the younger age group, 26 are in the older group; 26 are rural students, 14 attend urban schools; 33 receive an advanced or mixed level of instruction, 7 receive the general level; 17 have after school jobs, 23 do not. Based on this profile, one may conclude that the varsity-only sport participants do not differ in any noticeable or important manner from the other groups on these variables. Certainly not sufficiently so as to account for the trend toward lower delinquency levels.

It is interesting to note, in the light of the oft-noted focus of past research on varsity-only sport participants, that a larger number of student athletes in this study received their organized sport experience through community-based organized activities ($N = 100$) or through both community- and school-based organized activities ($N =$

149) rather than solely through varsity or school-based activities ($N = 40$). One therefore wonders if a similar sport location/sponsorship profile might hold true for the subject populations of said research. Certainly research outcomes based upon non-representative samples of sport participants are suspect to say the least.

Popular/Team/Contact (PTC) Sport Participation. The results of the total sample ANCOVA for this variable are provided in Table 18 (the ANCOVA table can be found in Appendix H - Table H-4). Exclusive participation in popular and/or team and/or contact sports is a statistically significant predictor of increased levels of delinquency ($F = 15.366$, $p < .001$, $\beta = .15$). Table 18 presents a comparison of the observed and the two adjusted delinquency means. In each instance, the delinquency mean for PTC participants is significantly greater than the mean of the comparison group. Exclusive participation in popular and/or team and/or contact organized sports is significantly associated with higher levels of delinquency.

This finding raises one's curiosity concerning the relative importance of the three components of the PTC variable with regard to its relationship with delinquency. Table 19 presents the results of the ANCOVA designed to answer this question. Of the three PTC variable components, only "team" proves to be significantly associated with

Table 18

PTC Sport Participation - Overall Delinquency Means

Delinquent Behaviour	Exclusive Participation in Popular and/or Team and/or Contact Sports		
	Mixed PTC & non-PTC participants + non-participants	Popular and/or Team and/or Contact Sports	<i>Eta/Beta</i>
Observed Means	11.36 <i>N</i> = 382	17.23 <i>N</i> = 198	.19*
Adjusted Means ^a	11.58 <i>N</i> = 364	16.85 <i>N</i> = 186	.17*
Adjusted Means ^b	11.77 <i>N</i> = 358	16.49 <i>N</i> = 184	.15*

* $p < .001$.^aAdjusted for the co-variate only.^bAdjusted for the co-variate and the other predictor variables.

Table 19

Exclusive Participation in Popular, Team and Contact Sports and Overall Delinquency - ANCOVA Table

EXPERIMENTAL sums of squares
Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariate					
SOCDESIR	10180.067	1	10180.067	52.667	.000
Main Effects	4629.539	3	1543.180	7.982	.000
POPULAR	195.426	1	195.426	1.011	.315
TEAM	810.339	1	810.339	4.192	.041
CONTACT	22.306	1	22.306	.115	.734
2-Way Interactions	370.593	3	123.531	.639	.590
Explained	15180.199	7	2168.600	11.217	.000
Residual	104784.239	542	193.329		
Total	119964.438	549	218.514		

Multiple R = .351. Multiple R^2 = .123.
TEAM eta = .22, $p < .001$; TEAM beta = .14, $p < .05$.

higher levels of delinquency ($F = 4.215$, $p < .05$, $\beta = .14$). A look at the observed and adjusted delinquency means of the three components (Table 20) is interesting. One sees that the differences in the observed means between the exclusive "yes" and "no" categories are statistically significant for all three groups. However, when adjustments are made for the covariate and for each of the other PTC components, only the differences in means for the team component reach significance.

A look at the breakdown of each of the three PTC components into their four possible constituent groups is also interesting. These data were subjected to a oneway ANOVA and a subsequent Scheffe multiple range test of means (significance level set at .05). Table 21 provides the outcome of this analysis. The delinquency mean for those athletes participating exclusively in popular sports is significantly higher than that of athletes participating exclusively in "unpopular" sports and the non-athlete group but not that of the mixed popular/unpopular sports group of athletes (Scheffe MRT, $p < .05$). A similar results holds for the contact sports component whereas, in the case of the team sports component, exclusive participation in team sports predicts a higher level of delinquency when compared to *all* of the other three groups. For all three PTC components there is an interesting, progressive increase in

Table 20

Exclusive Participation in Popular, Team and Contact Sports - Overall Delinquency Means

	Exclusive Participation in Popular, Team and Contact Sports					
Delinquent Behaviour	Exclusive Popular		Exclusive Team		Exclusive Contact	
Means	No	Yes	No	Yes	No	Yes
Observed	11.81	17.95	11.26	18.17	12.47	18.79
<i>Eta</i>	.18**		.15**		.22**	
Adjusted ^a	12.79	15.03	12.04	16.38	13.23	14.13
<i>Beta</i> ^a	.07ns		.14*		.02ns	
<i>Ns</i>	411	139	383	167	473	77

* $p < .05$; ** $p < .001$.^aAdjusted for the co-variate and the other predictor variables.

Table 21

Participation in Popular, Team and Contact Sports - Overall Delinquency Observed Means

Type of Sport Participation	Non-Participants	Unpopular	Mixed	Popular
Popular	11.55 <i>N</i> = 267	9.44 <i>N</i> = 61	14.09 <i>N</i> = 107	17.81 <i>N</i> = 145

	Non-Participants	Individual	Mixed	Team
Team	11.55 <i>N</i> = 267	8.42 <i>N</i> = 31	11.50 <i>N</i> = 103	17.99 <i>N</i> = 160

	Non-Participants	Non-Contact	Mixed	Contact
Contact	11.55 <i>N</i> = 267	10.64 <i>N</i> = 101	15.78 <i>N</i> = 128	18.69 <i>N</i> = 84

Post hoc Contrasts: Scheffe Multiple Range Tests, significance set at $p < .05$.

1. Popular Variable - popular mean significantly different from non-participants mean and unpopular mean.
2. Team Variable - team mean significantly different from non-participants mean, individual mean and mixed mean.
3. Contact Variable - contact mean significantly different from non-participants mean and non-contact mean.

delinquency rates across the categories of participation. The unpopular, individual and non-contact athletes all report lower levels of delinquency than do the non-athletes; the athletes who participate in the mixed sports categories all report a middle level of delinquency, higher than (or equal to) those of the non-athletes, but lower, of course, than those of their exclusive popular, team, contact counterparts.

General Sport Participation Revisited. In summary, three different participation-in-organized-sport variables and their relationship with delinquency have been examined: sport participation, "yes" or "no"; participation in varsity sports; and PTC sport participation. Two have proved to be significantly associated with higher levels of delinquency while the third--varsity sport participation--only partially so. An investigation of the relative predictive strength of the two significant variables was undertaken. The resulting ANCOVA table is presented as Table 22. PTC sport participation is seen to be the more effective delinquency predictor variable ($F = 10.886$, $p < .001$, $\beta = .17$); the relationship between general sport participation and level of delinquency no longer reaches statistical significance when adjusted for PTC participation ($F = 0.327$, $p > .05$, $\beta = .03$). Tables 23a and 23b present a comparison of the various unadjusted and adjusted delinquency means for the

Table 22

General Sport Participation, Exclusive PTC Sport Participation and Overall Delinquency - Analysis of Covariance Table

EXPERIMENTAL sums of squares
Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariates	23064.006	6	3844.001	22.384	.000
(Social Desirability, Gender, Age, Rural/Urban, Level of Instr., Job)					
Main Effects	2642.451	2	1321.225	7.694	.001
SPORPART	56.140	1	56.140	.327	.568
PTC	1869.451	1	1869.451	10.886	.001
Explained	25706.456	8	3213.307	18.711	.000
Residual	91533.211	533	171.732		
Total	117239.668	541	216.709		
Multiple R = .468. Multiple R ² = .219.					

Tablex 23a

General Participation in Organized Sport - Overall Delinquency Means: Observed, Adjusted for the Covariate, Adjusted for Other Predictor Variables and Adjusted for PTC Sport Participation

	Sport Participation		
Delinquent Behaviour	No	Yes	<i>Eta/Beta</i>
Observed Means	11.55 <i>N</i> = 267	14.91 <i>N</i> = 313	.11**
Adjusted Means ^a	11.83 <i>N</i> = 259	14.73 <i>N</i> = 291	.10*
Adjusted Means ^b	12.03 <i>N</i> = 253	14.54 <i>N</i> = 289	.09*
Adjusted Means ^c	13.85 <i>N</i> = 253	12.95 <i>N</i> = 289	.03ns

* $p < .05$; ** $p < .01$.

^aAdjusted for the co-variate only.

^bAdjusted for the co-variate and the other predictor variables.

^cAdjusted for the covariate, the other predictor variables and PTC sport participation.

Tablex 23b

PTC Sport Participation - Overall Delinquency Means: Observed, Adjusted for the Covariate, Adjusted for Other Predictor Variables and Adjusted for General Sport Participation

	Exclusive PTC Participation		
Delinquent Behaviour	No + Non-Participants	Yes	<i>Eta/Beta</i>
Observed Means	11.36 <i>N</i> = 382	17.23 <i>N</i> = 198	.19*
Adjusted Means ^a	11.58 <i>N</i> = 364	16.85 <i>N</i> = 186	.17*
Adjusted Means ^b	11.77 <i>N</i> = 358	16.49 <i>N</i> = 184	.15*
Adjusted Means ^c	11.56 <i>N</i> = 358	16.89 <i>N</i> = 184	.17*

* $p < .001$.

^aAdjusted for the co-variate only.

^bAdjusted for the co-variate and the other predictor variables.

^cAdjusted for the covariate, the other predictor variables and general sport participation.

two variables along with their respective *eta* and *beta* values.

Gender, Athletic Participation and Delinquency

A corollary of the main hypothesis is that both male and female varsity athletes should display lower levels of delinquency than male and female non-athletes (Segrave, 1983). Gender is seen to be an effective predictor of overall delinquency ($F = 36.680$, $p < .001$; Appendix H, Table H-4, PTC sport participation). Table 24 provides the unadjusted and adjusted delinquent behaviour means, *Ns*, *eta* and *beta* values for the females and males. These data indicate that males are significantly more delinquent than are females.

The gender-by-athletic participation interaction is not statistically significant ($F = 0.061$, $p > .05$, general sport participation). Table 25 presents the relevant observed data for the interaction. A comparison of the observed delinquency means reveals that male athletes commit more delinquent acts than their non-participant colleagues; the same holds true for the females. Thus no evidence is adduced to support the hypothesis. Also included in Table 25 are the observed means of the gender-by-sport participation interactions for the other two sport participation variables. These are included for comparison

Table 24

Gender and Overall Delinquency - Total Sample

Delinquent Behaviour	Gender	
	Females	Males
Observed Means	9.16	17.97
<i>Ns</i>	308	271
<i>Eta</i>	.30*	

Adjusted Means ^a	10.12	17.12
<i>Ns</i>	294	250
<i>Beta</i>	.24*	

* $p < .001$.^aAdjusted for the other predictor variables and the covariate.

Table 25

Gender by Types of Sport Participation Interactions

Overall Delinquent Behaviour - Observed Means								
	General Sport Participation		Varsity-Only Sport Participation				Exclusive PTC Sport Participation	
Gender	No	Yes	Non-Participants	Community	Both	Varsity	No + Non-Participants	Yes
Females	8.78 (<i>N</i> = 162)	9.92 (<i>N</i> = 130)	8.78 (<i>N</i> = 162)	9.82 (<i>N</i> = 40)	9.62 (<i>N</i> = 68)	10.57 (<i>N</i> = 21)	8.54 (<i>N</i> = 214)	11.36 (<i>N</i> = 78)
Males	16.13 (<i>N</i> = 91)	19.26 (<i>N</i> = 159)	16.13 (<i>N</i> = 91)	18.71 (<i>N</i> = 59)	20.86 (<i>N</i> = 78)	14.21 (<i>N</i> = 19)	15.28 (<i>N</i> = 144)	21.98 (<i>N</i> = 106)

purposes. In neither case is the interaction significant ($F = 2.269$, $p > .05$, PTC sport participation; ($F = 0.998$, $p > .05$, varsity-only sport participation). In only one instance do athletes display a lower level of delinquency than non-athletes: male varsity-only athletes compared to male non-participants.

One further question arises in the context of examining the importance of the gender: what is its relationship to social desirability? That is, is there a difference between males and females with regard to their response styles? Gender is significantly correlated with response style ($r = -.0945$, $p < .05$; females are coded "0", males are coded "1"). The average social desirability score for females was 6.627 ($SD = 3.928$, $N = 300$), for males it was 5.860 ($SD = 4.158$, $N = 257$).

Age, Athletic Participation and Delinquency

Another hypothesis generated from the literature states that deviancy/delinquency amongst athletes varies inversely with age and grade level (Buhrmann, 1977; Buhrmann & Bratton, 1978; Stark, Kent & Finke, 1987). Not surprisingly, the latter two variables are highly correlated--in this study to the point of multicollinearity ($r = .94$). Because of this, a decision was taken to examine the age variable only.

The athletes-only ANCOVA was the applicable statistical analysis undertaken to examine this hypothesis (Appendix H, Table H-5). One finds that age is a statistically significant predictor of delinquent behaviour within the athlete sample ($F = 5.780$, $p < .05$, $\beta = .13$). Table 26 presents the delinquency means, N s, η and β values of the age variable. From these data one may conclude that the younger age-group athletes are significantly less delinquent than the older age-group athletes. Support for the hypothesis is not forthcoming from these results.

Location of School (Rural/Urban) and Delinquency

It was hypothesized (Stark, Kent & Finke, 1987) that the heretofore reported negative relationship between delinquent behaviour and athletic participation will vary in strength depending upon the size of the community in which the school is located and therefore with the relative importance or visibility of the athletic event to the community in question.

Before investigating the relationship between rural/urban location-of-school and level of delinquency, however, it was thought worthwhile to examine the four schools, athletes-only sample, for its representativeness in terms of gender given the strength of the latter variable's predictive relationship with delinquency. Crosstabs

Table 26

Age and Overall Delinquency for Athletes Only

Delinquent Behaviour	Age	
	14 and 15 Age Group	16, 17, 18, and 19 Age Group
Observed Means	11.45	17.30
<i>N</i>	126	186
<i>Eta</i>	.18**	

Adjusted Means ^a	12.39	16.88
<i>N</i>	117	172
<i>Beta</i>	.13*	

* $p < .05$; ** $p < .01$.^aAdjusted for the other predictor variables and for the covariate.

analysis indicates that the four schools do not differ in terms of the proportionate gender split within their athlete groups, that is, one does not find a significant difference between schools in terms of the proportion of females who participate in organized sport compared to the number of males who participate ($\chi^2 (3, N = 317) = 1.162, p > .05$). In each school, more males are sport participants than females (Table 27).

The observed delinquency means for the rural/urban location of school variable indicate that being an athlete in an urban high school is a somewhat weak predictor of an increased level of delinquency ($\eta^2 = .11, p < .10$; Table 28). This relationship holds when the means are adjusted for the covariate, however, when they are adjusted for the covariate and the other predictor variables, the predictive power of the variable becomes insignificant ($F = 0.914, p > .10, \beta = .05$; Appendix H - Table H-5). Table 28 presents the relevant data. For the athletes, the location of his or her school, whether rural or urban, does not demonstrate a statistically significant relationship with delinquency when considered in concert with the other predictor variables. From a strictly descriptive stance, however, urban student-athletes are nevertheless seen to commit more delinquency than their rural counterparts.

Given that the hypothesis is based, as noted above, on

Table 27

Schools, Gender and Sport Participation

Gender	Schools			
	Sports Participants School A	Sports Participants School B	Sports Participants School C	Sports Participants School D
Females	50	40	34	15
Males	64	43	51	20
<i>Ns</i>	114	83	85	35

Crosstabs χ^2 (3, $N = 317$) = 1.162, $p > .05$).

Table 28

Location of School and Overall Delinquency of Athletes Only

Delinquent Behaviour	School	
	Rural (A and B)	Urban (C and D)
Observed Means	13.57	17.11
<i>N</i>	195	118
<i>Eta</i>	.11*	

Adjusted Means ^a	13.71	17.10
<i>N</i>	181	110
<i>Beta</i>	.10*	

Adjusted Means ^b	14.40	16.13
<i>N</i>	179	110
<i>Beta</i>	.05ns	

$p < .10$.

^aAdjusted for the covariate.

^bAdjusted for the other predictor variables and the covariate.

data which deals essentially with high school interscholastic sport participation, it was thought to be of value to look at the observed delinquency means of the varsity-only variable of this study in relation to the rural/urban variable. Table 29 presents this data. (Note: the interaction between the two variables, adjusted for the usual predictor variables and the covariate, is not statistically significant, $F = 1.043$, $p > .05$.) The means of the rural and urban community-based athletes are identical, the mean of the urban athletes who participate in both community-based and varsity sports is slightly higher than that of their rural counterparts. The real discrepancy appears in the comparison of the varsity-only athletes--rural varsity-only athletes would seem to commit substantially less delinquency than urban varsity-only athletes. This latter group in fact displays a greater mean delinquency level than any of the other groups.

Demographic Variables (Dichotomous) and Delinquency

Data measuring several demographic variables were gathered. Of these, age, gender and rural/urban location of school, have been dealt with above in the context of the testing of various hypotheses. There remain two variables of this group to examine.

Level of Instruction. Students in grades 10, 11 and 12

Table 29

Rural/Urban Location of School and Varsity-Only Sport Participation - Observed Delinquency Means

Delinquent Behaviour	Location/Sponsorship of Sport Participation			
	Non-Participants	Varsity Only	Community Only	Mixed
Rural	9.89 <i>N</i> = 139	7.62 <i>N</i> = 26	15.12 <i>N</i> = 73	14.53 <i>N</i> = 77
Urban	13.30 <i>N</i> = 114	21.00 <i>N</i> = 14	15.12 <i>N</i> = 26	16.84 <i>N</i> = 69

could receive one of two possible levels of instruction-- general or advanced. It was noted earlier, when examining the characteristics and representativeness of the study's student sample, that significantly more students were receiving the advanced level than the general ($p < .001$, binominal 2-tailed test) and that this difference mirrored the general student population characteristics of the four schools sampled. It was further determined that there was a significant difference in the gender make-up of advanced, as opposed to general, level of instruction classes with more females enrolled in the former (136) than the latter (46). The males, on the other hand, were fairly evenly split: 71 general level students, 77 advanced level ones (crosstabs $\chi^2(1, N = 330) = 18.377, p < .001$).

In discussions with school staff before the study was undertaken, they hypothesized that there would be a difference between general level students and other students in terms of delinquency and that this difference would take the form of more delinquency being committed by the former. A two-level variable was created to test this hypothesis. One level representing the students receiving the general level of instruction, the other level representing all other students in the study. The ANCOVA results indicate that level instruction ($F = 8.210, p < .01, \beta = .11$; Appendix H, Table H-4) is a significant predictor of overall delinquent

behaviour for the total sample and, although weak, for the athletes-only sample also ($F = 2.769$, $p < .10$, $\beta < .09$; Appendix H - Table H-5). Table 30 presents the relevant ANCOVA data. The observed delinquency means are significantly higher in both samples for those students who receive a general level of instruction (total sample $\eta^2 = .17$, $p < .001$; athlete sample $\eta^2 = .19$, $p < .01$). Similarly, the adjusted-for-the-covariate delinquency means of the total sample and of the athletes-only sample for the general level students are significantly higher than those of the "other students". Finally, the relationship continues to hold when the means are adjusted for all variables although it is much weaker in the athlete-only sample than in the total sample. The exploratory hypothesis is thus seen to be supported in both instances. General level students commit more overall delinquency than their comparison groups.

Employment. Students were asked whether they held a job outside of school hours and, if so, how much of their time it consumed (in hours) on a weekly basis. Thus two measures of this variable were obtained, one dichotomous: job? yes or no; and one continuous: total number of hours worked per week. The continuous "job hours" variable will be dealt with below when examining the other continuous predictor variables of the study.

Dealing with the dichotomous variable from a

Table 30

Level of Instruction - Overall Delinquency Means

Delinquent Behaviour	Level of Instruction: Total Sample		Level of Instruction: Athletes	
	Advanced Plus Other	General	Advanced Plus Other	General
Means				
Observed	12.09	18.42	13.62	21.55
<i>N</i>	467	115	262	51
<i>Eta</i>	.17****		.19****	
Adjusted ^a	12.26	17.87	14.02	20.44
<i>N</i>	446	106	247	44
<i>Beta</i>	.15****		.14**	
Adjusted ^b	12.55	16.66	14.44	18.49
<i>N</i>	439	105	245	44
<i>Beta</i>	.11***		.09*	

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aAdjusted for the covariate.

^bAdjusted for the other predictor variables and the covariate.

descriptive statistics point of view, it is noted that there is no significant difference between the number of students who report being employed during non-school hours and those who do not (292 and 295 respectively; $p > .05$, binominal 2-tailed test). Fewer female students hold a job (149) compared to those who do not (162), whereas more males (142) are employed than not (132). The crossover is not statistically significant (crosstabs χ^2 (1, $N = 585$) = 0.893, $p > .05$). There is, interestingly, a significant relationship between holding a job and participating in organized sports (crosstabs χ^2 (1, $N = 584$) = 9.483, $p < .01$). A greater number of sport participants hold jobs than not (176 compared to 140), while fewer non-sport participants do (115 compared to 153).

The ANCOVA results (Appendix H, Tables H-4 and H-5) indicate that the dichotomous "job" variable is not a statistically significant predictor of overall delinquency for either the total sample ($F = 1.742$, $p > .05$, $\beta = .05$) or the athletes-only sample ($F = 0.261$, $p > .05$, $\beta = .03$) when adjusted for the covariate and the other predictor variables. Table 31 provides a summary of this analysis. It is of note that employment is a significant predictor of a higher level of delinquency for the total sample when considering the observed means, ($\eta^2 = .09$, $p < .05$) and also

Table 31

Employment - Overall Delinquency Means

Delinquent Behaviour	Employment: Total Sample		Employment: Athletes Only	
	No	Yes	No	Yes
Means	12.07	14.65	14.15	15.56
Observed	12.07	14.65	14.15	15.56
<i>N</i>	292	287	137	174
<i>Eta</i>	.09*		.04ns	

Adjusted ^a	12.16	14.56	14.22	15.64
<i>N</i>	278	272	127	163
<i>Beta</i>	.08*		.04ns	

Adjusted ^b	12.66	14.09	14.56	15.45
<i>N</i>	276	268	127	162
<i>Beta</i>	.05ns		.02ns	

* $p < .05$.^aAdjusted for the covariate.^bAdjusted for the other independent variables and the covariate.

the adjusted-for-the-covariate means ($\beta = .08$, $p < .05$).

Seriousness of Delinquency and Athletic Participation

Segrave (1982) found that participation in intervarsity sports lessens the likelihood of involvement in delinquent behaviour of a serious nature. The approach taken in this study to the measurement of the seriousness of delinquent behaviour was outlined in a previous section. Table 32 presents the zero order intercorrelation matrix of these measures with the measure of the criterion variable, that is, overall delinquent behaviour. Each of the six derived measures--seriousness of delinquent behaviour and the five categories of delinquency--correlate significantly with the criterion measure beyond the .001 level of probability.

The seriousness data were analyzed via two MANCOVAs (described above). Each MANCOVA examined the relationship between the standard five predictor variables, gender, age, rural/urban location of school, level of instruction and after-school employment, one of the two sport participation variables, general or PTC, and the six criterion variables. Social desirability was the covariate in each case. Table 33 compares the various delinquency means of the sport participation variables. Exclusive PTC sport participation is significantly associated with higher levels of delinquency for all six of the derivative delinquency

Table 32

Correlation Matrix^a: Overall Delinquent Behaviour, Seriousness of Delinquency and Five Categories of Behaviour

Delinquent Behaviour							
	Overall	Seriousness	Persons	Property	Substance Abuse	Traffic	Other
Overall	---	.9575*	.7672*	.8713*	.8172*	.6648*	.8802*
Seriousness		---	.8133*	.8323*	.7632*	.6337*	.8134*
Persons			---	.5981*	.4867*	.4255*	.6475*
Property				---	.6311*	.4576*	.7288*
Substance Abuse					---	.5239*	.5817*
Traffic						---	.4946*
Other							---

* $p < .001$.

^aPairwise, zero order correlation coefficients, $Ns = 582$.

Table 33

Sport Participation and Measures of Seriousness and Type of Delinquency

Delinquent Behaviour Means	Exclusive PTC Sport Participation		General Sport Participation	
Seriousness	No	Yes	No	Yes
Observed ^a	20.439	31.217	21.178	26.654
Adjusted ^b	23.883	32.058	24.784	28.308
F^c	14.639****		2.652ns	
Against Person	No	Yes	No	Yes
Observed ^a	1.226	2.348	1.296	1.879
Adjusted ^b	1.704	2.550	1.813	2.167
F^c	10.411****		1.641ns	
Against Property	No	Yes	No	Yes
Observed ^a	2.321	3.891	2.435	3.222
Adjusted ^b	2.826	4.023	2.950	3.475
F^c	10.825****		1.994ns	
Substance Abuse	No	Yes	No	Yes
Observed ^a	2.712	3.908	2.802	3.395
Adjusted ^b	2.914	3.968	2.956	3.550
F^c	9.150***		3.062*	
Traffic	No	Yes	No	Yes
Observed ^a	1.587	2.207	1.557	2.007
Adjusted ^b	1.708	2.194	1.666	2.051
F^c	7.491***		5.015**	
Other	No	Yes	No	Yes
Observed ^a	3.405	5.125	3.336	4.561
Adjusted ^b	3.878	5.085	3.898	4.635
F^c	8.950***		3.302*	

* $p < .10$; ** $p < .05$; * $p < .01$; * $p < .001$.

^aWeighted means due to unequal cell *ns*.

^bAdjusted for the other independent variables and the covariate.

^cUnivariate *F*s for adjusted delinquency means.

measures. General sport participation, on the other hand, is significantly associated with only three--substance abuse, traffic offences and other offences. In either case, however, and as one has seen earlier with overall delinquency, the hypothesis is not supported, participation in organized sport is not associated with lower levels of serious delinquency.

Table 34 presents the seriousness and type of delinquency data for the other predictor variables with the exception of employment. The multivariate F test for this variable did not reach statistical significance ($F = 1.371$, $p > .10$). The data presented reflects the results of the PTC sport participant MANCOVA. While the values of the univariate F s for each predictor variable are slightly different in the two MANCOVAs, the significance of the means and their associated cut-off levels of probability are the same, thus only one set of data is reported.

Males report significantly higher rates of delinquency for all six of the derived criterion variables. Older students commit significantly more serious offences, more substance abuse offences and more traffic offences than their younger comparison group. Urban students commit significantly more serious offences, more offences against property and more substance abuse offences than their rural counterparts. Lastly, students who receive a general level

Table 34

Predictor Variables and Measures of Seriousness and Type of Delinquency

Delinquent Behaviour	Gender		Age		Location of School		Level of Instruction	
Seriousness	Fem.	Male	14-15	16-19	Rural	Urban	Mixed	Gen.
Observed ^a	17.08	32.30	19.96	26.31	22.34	26.59	21.87	33.50
Adjusted ^b	21.60	33.90	24.41	30.84	26.52	29.64	24.01	33.25
F^c	34.577****		6.181**		3.446*		11.271****	
Against Person	Fem.	Male	14-15	16-19	Rural	Urban	Mixed	Gen.
Observed ^a	0.890	2.444	1.640	1.589	1.547	1.692	1.349	2.692
Adjusted ^b	1.462	2.746	2.155	2.104	2.119	2.136	1.619	2.803
F^c	25.624****		0.553ns		0.641ns		15.436****	
Against Property	Fem.	Male	14-15	16-19	Rural	Urban	Mixed	Gen.
Observed ^a	1.914	3.952	2.444	3.074	2.572	3.255	2.559	4.096
Adjusted ^b	2.607	4.186	3.057	3.721	3.164	3.725	2.911	4.110
F^c	19.995****		1.910ns		3.765*		7.048****	
Substance Abuse	Fem.	Male	14-15	16-19	Rural	Urban	Mixed	Gen.
Observed ^a	2.240	4.144	1.661	3.898	2.355	4.201	2.854	4.231
Adjusted ^b	2.620	4.205	2.198	4.444	2.635	4.371	3.090	3.909
F^c	22.057****		32.437****		22.761****		2.204ns	
Traffic	Fem.	Male	14-15	16-19	Rural	Urban	Mixed	Gen.
Observed ^a	1.363	2.304	1.042	2.201	1.730	1.893	1.630	2.500
Adjusted ^b	1.548	2.327	1.308	2.470	1.926	1.980	1.651	2.351
F^c	17.422***		35.160****		0.001ns		5.816**	
Other	Fem.	Male	14-15	16-19	Rural	Urban	Mixed	Gen.
Observed ^a	2.884	5.280	3.910	4.031	3.909	4.103	3.799	4.789
Adjusted ^b	3.461	5.431	4.408	4.540	4.438	4.532	4.180	4.884
F^c	26.375***		0.032ns		0.382ns		1.987ns	

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aWeighted means due to unequal cell *ns*.

^bAdjusted for the other independent variables and the covariate.

^cUnivariate *F*'s for adjusted delinquency means.

of instruction commit more serious offences, more offences against persons, more offences against property and more traffic offences than students who receive an advanced level or a blended level of instruction.

Quantity of Athletic Participation and Delinquency

The literature indicates that the quantity of athletic participation varies inversely with deviant/delinquent behaviour (Buhrmann, 1977; Buhrmann & Bratton, 1978; Segrave, 1982; Segrave & Hastad, 1982). Table 35 presents the zero correlation matrix for the sport quantity variables with the those predictor variables which have been found to have both a significant relationship with them and with overall delinquency: gender, age, PTC sport participation, level of instruction, sport motivation "aggression" and duration of physical activity. Number of years of participation correlates significantly with gender; male report longer involvement than do females. Number of years of participation and hours per week of practice and playing are significantly and positively correlated with age. The first correlation is easily understood in that the older the student, the more opportunity he or she has had to participate in athletic programs. The reason for the second and larger significant correlation is not quite so obvious although it could be interpreted as indicating that the

Table 35

Zero Order Correlation Matrix: Sport Quantity Variables and Other Delinquency Predictor Variables

Variable	Number of Sports Played	Number of Years Involved	Hours Per Week Involved	Number of Seasons Per Year ^a
Gender	.0100ns (N = 317)	.0991* (N = 315)	.0868ns (N = 310)	-.0448ns (N = 198)
Age	.0182ns (N = 317)	.1775*** (N = 315)	.2259**** (N = 310)	-.0194ns (N = 199)
Popular, Team, Contact	-.2842**** (N = 318)	-.2305**** (N = 316)	-.2438**** (N = 311)	-.3033**** (N = 199)
Level of Instruction	-.1111** (N = 318)	-.0412ns (N = 316)	-.0423ns (N = 311)	-.1258* (N = 199)
Duration of Physical Activity	.0159ns (N = 177)	.0272ns (N = 176)	.2128*** (N = 173)	.1208ns (N = 173)
Sport Motivation "Aggression"	.2590**** (N = 174)	.1831** (N = 172)	.2606**** (N = 170)	.1683** (N = 170)

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aData for this variable was collected in 3 of the 4 high schools only.

older an adolescent becomes (and perhaps the more accomplished his/her performance), the more time devoted, on a weekly basis, to playing and practising.

All four of the sport quantity variables correlate significantly and negatively with the PTC sport participation variable indicating that the exclusive PTC athletes spend less time involved in their athletic activities than their non-exclusive counterparts. This finding could perhaps be interpreted as indicating less of a seriousness or dedication toward their athletic activities. Conversely, those athletes who have excess energy, who feel eager, active or impulsive while participating (i.e., "aggressive" according to Butt's model of sport motivation) spend more time at their athletic activity than those who do not experience such feelings. Level of instruction correlates significantly and negatively with number of sports played and number of seasons per year engaged in organized sport. The general level of students report fewer sports and fewer seasons per year. Finally, duration of physically activity over the past two weeks prior to the administration of the test protocol is significantly and positively correlated with hours per week engaged in organized sport.

Table 36 presents the partial correlation matrix relating the quantity of sport variables with the various

Table 36

Partial Correlation Matrix^a: Quantity of Athletic Participation and Delinquency Measures

Delinquent Behaviour	Number of Sports Played	Number of Years Involved	Hours Per Week Involved	Number of Seasons Per Year
Overall	-.0484	.0220	-.1117	-.0596
Seriousness	-.0691	.0214	-.1319	-.0799
Offences Against Persons	-.0658	-.0186	-.1362*	-.0614
Offences Against Property	-.0219	-.0023	-.0912	-.0699
Substance Abuse	-.0124	.0548	-.0699	-.0595
Traffic Offences	-.0473	.0571	-.0628	.0022
Other Offences	-.0693	.0063	-.0915	-.0412

* $p = .10$.

^aControlling for Gender, Age, Exclusive PTC Sport Participation, Level of Instruction, Sport Motivation "Aggression" and Duration of Physical Activity ($N = 143$, Three Schools Only).

delinquency measures. This matrix presents the data for the athletes of three high schools only in that the seasons variable, the sport motivation variable and the physical activity variable were not administered to the students of the fourth school. Only one of the correlations presented in the table reaches significance (set at the .10 level of probability). Number of hours playing and practising is negatively correlated with offences against persons. Also, from the table one notes that three of the sport quantity variables--number of sports played, hours per week involved and number of seasons per year--display a weak, yet consistent, negative association, with all but one of the delinquency criterion measures whereas the fourth, number of years involved, is weakly yet positively associated with them (excepting offences against persons and offences against property). No obvious support is enlisted for the hypothesis based on these data.

Demographic Variables (Continuous) and Delinquency

Employment. Students who held a job outside of school hours were asked how much of their time it consumed (in hours) on a weekly basis. Table 37 presents the results of the partial correlational analysis of the continuous variable "job hours per week" with the various measures of delinquency and three predictor variables with which it is

Table 37

Partial Correlation Matrix^a: Employment Hours and Measures of Delinquency

Delinquent Behaviour ^b	Hours Worked Per Week
Overall Delinquent Behaviour	.0711ns
Seriousness of Delinquency	.0667ns
Offences Against Persons	.0280ns
Property Offences	.0040ns
Substance Abuse Offences	.1197*
Traffic Offences	.1367**
Other Types of Offences	.0572ns
Gender ^c	.2210***
Age ^c	.2593***
Level of Instruction ^c	.2733***

* $p < .10$; ** $p = .05$; *** $p < .001$.

^aControlling for Gender, Age and Level of Instruction

^bPairwise correlations, $N = 263$.

^cPairwise correlations, N s range between 268 and 273.

significantly correlated and which, in turn, correlate significantly with the criterion variables. These latter three variables have been partialled out of the main correlational analysis. "Job hours" is positively and significantly related to gender, age and level of instruction. Males tend to work more hours than females during their extracurricular employment. The older the student, the more hours he or she works. Students receiving a general level of instruction tend to work more hours than those receiving an advanced level of instruction or those receiving a blended level.

The employment variable is seen to be significantly and positively related only to the commission of substance abuse offences and to traffic offences. These two correlations might be interpreted as indicating that being employed means having more disposable income and therefore the wherewithal to operate a motor vehicle and an increased ability to purchase alcohol and drugs.

Sport Psychology Variables and Delinquency

Sport Motivation. The first step in the examination of the relationship of the sport motivation variable with delinquent behaviour was to determine the fit of Butt's model (1979, 1987), as outlined in Figure 2 above, to the data of this study. Table 38 presents the zero order correlation

Table 38

Zero Order Correlation Matrix^a: Sport Motivation Scales

Sport Motivation Scales	Aggression	Conflict	Competence	Competition	Cooperation
Aggression	---	.3035***	.1794*	.5343***	-.0967ns
Conflict	.3035***	---	.2444***	.4334***	.0325ns
Competence	.1794*	.2444***	---	.2875***	.2520***
Competition	.5343***	.4334***	.2875***	---	-.0069ns
Cooperation	-.0967ns	.0325ns	.2520***	-.0069ns	---

* $p < .05$; ** $p < .01$; *** $p < .001$.

^aPairwise correlations, N s ranged from 173 to 179.

matrix of the variable's various subcomponents. One notes that Butt's model generally holds up. The psychological motivational components of "aggression" and "conflict" correlate significantly with the social motivational variable "competition" but not with the other social motivation variable "cooperation" as the model predicts. Similarly, the primary component "competence" correlates significantly with the secondary component "cooperation", again, as predicted. Finally, the "competition" and the "cooperation" components do not correlate with each other. An anomaly appears, however, in relation to the significant and positive associations displayed between the "competency" scale and "competition", "conflict" and "aggression" scales. According to the model, "competency" should correlate highly only with "cooperation".

It was hypothesized that those athletes who are motivated by an aggressive psychological style and a competitive social style would report more incidences of delinquent behaviour than would those motivated by a competency psychological style and a cooperative social style. Table 39 presents the partial correlation matrix for the five components of sport motivation and the seven measures of delinquent behaviour with the relevant predictor variables partialled out of the analysis. As well, the zero order correlations of the sport motivation variables with

Table 39

Partial Correlation Matrix^a: Sport Motivation Scales and Delinquent Behaviour Measures Amongst Athletes (Three Schools)

Delinquent Behaviour	Sport Motivation				
	Aggression	Conflict	Competence	Competition	Cooperation
Overall ^b	.2086***	-.1099ns	-.0972ns	-.0557ns	-.2958****
Seriousness ^b	.2221***	-.1091ns	-.0690ns	-.0573ns	-.2976****
Against Person ^b	.2441****	-.0284ns	.0040ns	.0214ns	-.2416****
Against Property ^b	.1886**	-.1380*	-.0677ns	-.0928ns	-.2608****
Substance Abuse ^b	.1809**	-.1136ns	-.1565**	-.0237ns	-.2756****
Traffic Offences ^b	.0270ns	-.0961ns	-.0951ns	-.1005ns	-.1171ns
Other Offences ^b	.1963**	-.0612ns	-.0732ns	-.0185ns	-.2810****
Gender ^c	.1820**	-.0404ns	.1448*	.2460****	-.1983***
Age ^c	.2503****	.1926***	.0473ns	.1942***	.0710ns
School ^c	.0738ns	.1798**	.1078ns	.1979***	.0465ns

* $p < .10$; ** $p = .05$; *** $p < .01$; **** $p < .001$.

^aControlling for Gender, Age and Rural/Urban Location of School.

^bPairwise correlations, N s range from 165 to 170.

^cZero order correlations, N s range from 173 to 179.

the relevant predictor variables, gender, age and location (rural/urban) of school, are presented in the table. These data were collected in three of the four high schools and, of course, only from the sport participants of those schools.

Of the five sport motivation variables, two are consistently and significantly associated with all the various measures of delinquent behaviour but one. The social motivational variable "cooperation" is seen to be significantly and *negatively* associated with all measures of delinquency save traffic offences. Similarly, the psychological motivational variable "aggression" correlates significantly and *positively* with all measure of delinquency save traffic offences. In addition, the "competency" component correlates significantly and negatively with substance abuse offences.

In terms of the relationships between delinquency and the "aggression" and "cooperation" components of sport motivation, the hypothesis is seen to be upheld. Contrary to expectations, however, the "competition" motivational variable is not significantly associated with any form of delinquent behaviour, here defined, while the "competency" variable is but with one measure only. Nor do the "conflict" variable correlations reach statistical significance. Interestingly, the associations of this latter

with all measures of delinquency are consistently negative where one might have expected them to be positive. The offsetting direction of the correlations of "aggression" and "conflict" variables with the delinquency measures helps to explain, perhaps, why there are no significant correlations between "competition" and those same measures, at least according to the schematic diagram Butt provides for her sport motivation model (Figure 2).

Finally, it is noted that the sport motivation variables correlate significantly with some of the predictor variables. In terms of gender, males would seem to be motivated more by aggressive, competency and competitive aspects of sport whereas females more by cooperative aspects. There would appear to be no gender difference associated with the conflict motivational component. Insofar as the age predictor variable is involved, older athletes are more motivated by the aggressive, conflict and competitive components of sport motivation than their younger colleagues. Similarly, urban school athletes indicate that they are more motivated by the conflict and competitive components than do rural school athletes.

Sport Satisfaction. Without a guiding model from which to derive an hypothesis linking this variable to delinquent behaviour, it was nevertheless hypothesized that a negative association could be expected to exist between a high level

of satisfaction with one's involvement in organized sport and delinquent behaviour. This can be described as a corollary expectation based upon the main hypothesis of a link between organized sport participation and delinquency. However, insofar as sport participation (in certain forms) has subsequently been found to have a positive, as opposed to a negative, association with delinquent behaviour, the corollary expectation that the original proposed relationship will hold may be suspect.

The sport satisfaction data, like the sport motivation data, were collected in three of the four high schools and only from the athletes of those schools. Table 40 presents the zero order intercorrelation matrix of the two sport satisfaction scales.

Table 41 presents the correlational matrix demonstrating the relationship, or rather lack thereof, of the sport satisfaction scales with the measures of delinquency. Not one of the partial correlation coefficients (controlling for either response style and sport enjoyment "social or gender and sport enjoyment "social) reaches statistical significance. There is a noteworthy consistent, negative correlation between sport satisfaction "personal outcome" and the delinquency measures with the exception of traffic offences. Also of some interest is the significant and positive zero order

Table 40

Zero Order Correlation Matrix^a: Sport Satisfaction Scales

Sport Satisfaction Scales	Leadership of Coach	Personal Outcome
Leadership of Coach	---	.1658*
Personal Outcome	.1658*	---

* $p < .05$.^aPairwise correlations, N = 179.

Table 41

Partial Correlation Matrix: Sport Satisfaction Scales and Measures of Delinquency Amongst Athletes (Three Schools)

Delinquent Behaviour	Sport Satisfaction	
	Leadership of Coach ^a	Personal Outcome ^b
Overall	.0235	-.0399
Seriousness	.0098	-.0554
Against Person	.0367	-.0122
Against Property	-.0173	-.0777
Substance Abuse	.0760	-.0026
Traffic Offences	.0406	.0082
Other Offences	-.0238	-.0452
Gender ^c	-.0088ns	.1292*
Social Desirability ^c	.2191***	.0343ns
Sport Enjoyment "Social" ^d	.3042****	.1732**

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aPartial correlations controlling for Social Desirability and Sport Enjoyment "Social", $N_s = 161$.

^bPartial correlations controlling for Gender and Sport Enjoyment "Social", $N_s = 172$.

^cZero order correlations, N_s ranged between 165 and 166.

^dZero order correlations, N_s ranged between 179 and 180.

correlation of "satisfaction with the coach's leadership" with response style bias (i.e., social desirability). Those scoring high on social desirability also tend to score high on satisfaction with their coach, perhaps indicating a reluctance on their part to criticize an authority figure of some importance to them.

Sport Enjoyment. Similar to the sport satisfaction variable, there existed no guiding model from which to derive an experimental hypothesis linking sport enjoyment to delinquent behaviour. Also like sport satisfaction, it was reasoned that a negative association might be expected based upon the notion that higher levels of enjoyment from one's participation in organized sport would potentially be associated with less delinquency. The sport satisfaction data were collected in three of the four high schools only. Table 42 presents the zero order intercorrelation matrix of the three sport enjoyment scales.

Table 43 provides the relevant partial correlation coefficients demonstrating the relationship, or general lack thereof, of the three sport enjoyment variables with the various forms of delinquency of the athletes and with the three predictor variables (zero order correlations) that correlate significantly with both of them, that is, response style, gender and sport motivation "cooperation". Only one of the partial correlations reaches significance. The

Table 42

Zero Order Correlation Matrix^a: Sport Enjoyment Scales

Sport Enjoyment Scales	Intrinsic (Process)	Social	Extrinsic (Product)
Intrinsic (Process)	---	.4547*	.2611*
Social	.4547*	---	.1078ns
Extrinsic (Product)	.2611*	.1078ns	---

* $p < .001$.^aPairwise correlations, *Ns* ranged from 202 to 203.

Table 43

Partial Correlation Matrix: Sport Enjoyment Scales and Measures of Delinquency Amongst Athletes (Three Schools)

Delinquent Behaviour	Sport Enjoyment ^a		
	Intrinsic	Social	Extrinsic
Overall	-.0191	-.0369	.0155
Seriousness	-.0452	-.0112	.0446
Against Person	-.0945	-.0339	.1035
Against Property	-.0240	.0238	-.0171
Substance Abuse	-.0267	-.1628*	-.0457
Traffic Offences	.0254	.0036	.0259
Other Offences	.0418	.0272	.0354

Social Desirability ^b	.1436**	.1007ns	-.1001ns
Gender ^c	.1080ns	-.1233*	.2153***
Sport Motivation "Cooperation" ^d	.1939***	.3140****	-.0262ns

* $p = .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aPartial correlations controlling for Social Desirability, Gender and Sport Motivation "Cooperation", $N_s = 160$.

^bZero order, pairwise correlations, N_s ranged from 186 to 187.

^cZero order, pairwise correlations, N_s ranged from 201 to 202.

^dZero order, pairwise correlations, N_s ranged from 178 to 179.

social aspect of sport enjoyment is significantly and negatively correlated with the committal of substance abuse offences. In all other instances, the sport enjoyment scales displayed no significant nor particularly consistent, in terms of direction, relationship with the various measures of delinquent behaviour.

The zero order correlation coefficients relating gender to sport enjoyment are interesting. The extrinsic or product social enjoyment scale is significantly and positively correlated with gender. Males indicate they gain more enjoyment from their sport participation through winning, getting rewards and pleasing others than do females. Although not of statistical significance, males seem to gain more enjoyment from the intrinsic or process factors of playing sports than females while the latter gain more enjoyment from the social aspects of participation such as belonging to a team and/or being with friends. Also of interest is the significant and positive correlation between social desirability and sport enjoyment "intrinsic". Those who claimed intrinsic or process factors of participation to be enjoyable were more likely to want to present themselves in a good light generally.

It is also interesting to look at the relationships between two of the sport motivation scales--sport motivation "cooperation" and sport motivation "competition"--and sport

enjoyment. Perusal of Figure 2, along with an examination of the various items used to construct the sport enjoyment scales, reveals a potential affinity between the two social motivational factors and the three enjoyment factors. From Butt's model and Wankel and Kreisel's factor items, it could be argued that one would expect the social motivation factor "competition" and the sport enjoyment factor "extrinsic" to be significantly correlated. Similarly, the motivational factor "cooperation" and the enjoyment factors "intrinsic" and "social" should be related. Table 44 presents the relevant data whereby one sees that these expectations are confirmed.

Physical Fitness/Physical Activity Variables and Delinquency

The reasoning underlying the collection of data measuring these variables involved a variation of the hypothesis concerning the relationship between sport participation and delinquency. The assumption made was that individuals who achieve and maintain a fairly high level of fitness and/or who are engaged in higher degrees of physical activity may be less likely to engage in delinquent behaviour when compared to those of lower levels or degrees of fitness and physical activity.

Level of Physical Fitness. The fitness variable correlates significantly with seven of the delinquency

Table 44

Correlation Matrix^a: Sport Motivation Scales and Sport Enjoyment Scales

Sport Motivation	Sport Enjoyment		
	Intrinsic	Social	Extrinsic
Competition	.0765	-.0343	.2015*
Cooperation	.1939**	.3140***	-.0262

* $p < .05$; ** $p < .01$; *** $p < .001$.

^aZero order, pairwise correlations, N s ranged from 177 to 179.

predictor variables--gender, age, popular/team/contact aspect of sport, level of instruction, sport motivation "aggression" and duration of physical (Table 45). From these correlations one may conclude that: 1) males consider themselves to be more fit than do females; 2) younger students consider themselves more fit than older students; 3) athletes who participate exclusively in popular and/or team and/or contact sports consider themselves to be more fit than do those who participate in a mixture of different types of sports or who are non-athletes; 4) those who receive a general level of instruction consider themselves to be less fit than do students who receive an advanced level of instruction or a blended level; 5) those athletes who experience motivations or feelings of a positive, cooperative nature according to Butt's sport motivation model while, or for, participating in organized sports, consider themselves to be more fit than than those who do not experience such feelings or motivations; 6) those athletes who experience motivations or feelings of an aggressive nature also consider themselves to be more fit than those who do not experience such feelings or motivations; and 7) those who consider themselves to be more physically fit or physically active report spending a longer time engaged in physical activities than those who report a lower level of fitness.

Table 45

Correlation Matrix^a: Level of Physical Fitness with Delinquency Predictor Variables

Predictor Variables	Level of Physical Fitness
Gender	.2227**** (<i>N</i> = 319)
Age	-.0980* (<i>N</i> = 319)
PTC Sport Participation	.1726*** (<i>N</i> = 322)
Level of Instruction	-.1306** (<i>N</i> = 322)
Sport Motivation "Cooperation"	.1431* (<i>N</i> = 170)
Sport Motivation "Aggression"	.1562** (<i>N</i> = 175)
Duration of Physical Activity	.1591*** (<i>N</i> = 276)

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aPairwise, zero order correlation coefficients.

Table 46 provides the partial correlation coefficients relating the student's perception of their fitness and activity level over the past twelve months with the various measures of delinquency while controlling for the seven predictor variables noted above. None of the partial correlations reaches statistical significance. However, all but one are in the predicted direction, that is, inversely correlated with delinquent behaviour. The sole exception is the traffic offences scale, in which case the correlation is small but positive.

Duration of Physical Activity. Table 47 presents the zero correlation matrix of the duration of physical activity variable with the predictor variables with which it correlates significantly and which, in turn, correlate significantly with at least one measure of delinquency. The two predictor variables are gender and level of physical fitness. These correlations are interpreted as signifying that: 1) males report spending more time spent engaged in physical activities than females; and 2) the fitter the individual, the longer, in terms of hours per week, he or she reports being engaged in physical activities.

The partial correlational coefficients relating the duration of physical activity to the various delinquency measures are presented in data column two of Table 46. All

Table 46

Correlation Matrix: Level of Physical Fitness, Duration of Physical Activity and Measures of Delinquency (Three Schools)

Delinquent Behaviour	Physical Fitness/ Physical Activity	
	Fitness ^a	Activity Duration ^b
Overall	-.0409	.1488**
Seriousness	-.0445	.1225**
Against Person	-.0148	.1086*
Against Property	-.0396	.0693
Substance Abuse	-.1031	.1375**
Traffic Offences	.0637	.1310**
Other Offences	-.0116	.1479**

* $p < .10$; ** $p < .05$.

^aPartial correlations controlling for Gender, Age, PTC Sport Participation, Level of Instruction, Sport Motivation "Cooperation", Sport Motivation "Aggression" and Duration of Physical Activity; $Ns = 142$.

^bPartial correlations controlling for Gender and Level of Fitness, $Ns = 272$.

Table 47

Correlation Matrix^a: Duration of Physical Activity with Delinquency Predictor Variables

	Delinquency Predictor Variables	
	Gender	Level of Physical Fitness
Duration of Physical Activity	.1120* (<i>N</i> = 294)	.1591** (<i>N</i> = 276)

* $p < .10$; ** $p < .01$.

^aPairwise, zero order correlation coefficients.

of the correlations are positive. Six of the seven are statistically significant: overall delinquency committed in the past year; serious delinquency; offences against persons; substance abuse offences; traffic offences; and "other" offences. Thus, the more time one reported being involved in physical activity over the fourteen days prior to the administration of the research protocol, the greater the amount of most kinds of delinquent behaviour reported.

The two fitness/activity variables present an interesting contrast. While the two variables correlate (zero order) significantly and positively with each other, they display opposite associations (except for traffic offences) with delinquency when one controls for the effects of other relevant predictor variables. A higher level of fitness is arguably associated with a lower level of delinquency while the longer time spent engaging in physical activities is significantly associated with a higher level of delinquency.

Sport Participation and Delinquency Revisited

To this point, several dichotomous variables have proven to be statistically significant predictors of higher levels of overall delinquency when considering the total sample of students: exclusive PTC sport participation; gender (males); age (older); rural/urban location of school

(urban); and level of instruction (general). In the context of the four-school, athletes-only sample, exclusive PTC sport participation, gender (males), age (older) and level of instruction (general) are the significant predictors. In addition, three continuous variables--sport motivation "aggression", sport motivation "cooperation" and physical activity "duration"--have also proven to be significantly correlated with overall delinquency for the athletes of three of the schools. It was decided, therefore, to examine these latter two sets of variables in combination which by so doing creates, in effect, a new student sample: the three-school, athlete-only sample.

Tables 48 presents the outcome of the appropriate analysis. The sport motivation "aggression", sport motivation "cooperation" and duration of physical activity variables were introduced as covariates to the ANCOVA. Also, the rural/urban location of school variable was included as a covariate in the ANCOVA rather than as a predictor variable in that only three of the four schools were involved in the sport motivation/physical activity assessments; it was thought important, however, to retain this variable in the analysis for the purpose of maintaining a standardized approach.

The relationship between level of delinquency and exclusive PTC sport participation is seen to dwindle into

Table 48

ANCOVA Table - PTC Revisited

DBOVERAL overall del. beh. in last year only by PTC team,newpop.,contact GENDER AGE 2 levels LEVEL gen.lev.ofinstr.vs.everything else JOB employment with SOCDESIR social desir./response style RURURB schools - 2 grps. - rural/urban SMCOOP SM-cooperation - spor. parts. only SMAGGRES SM-aggression - spr. parts. only DURATN dur. of phys. act. in hrs					
EXPERIMENTAL sums of squares Covariates entered FIRST					
Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Covariates	10764.498	5	2152.900	13.813	.000
SOCDESIR	3412.098	1	3412.098	21.891	.000
RURURB	298.432	1	298.432	1.915	.169
SMCOOP	4671.456	1	4671.456	29.971	.000
SMAGGRES	216.761	1	216.761	1.391	.241
DURATN	1302.135	1	1302.135	8.354	.005
Main Effects	3482.112	5	696.422	4.468	.001
PTC	362.668	1	362.668	2.327	.130
SEX	1467.694	1	1467.694	9.416	.003
AGE	884.536	1	884.536	5.675	.019
LEVEL	360.361	1	360.361	2.312	.131
JOB	294.817	1	294.817	1.891	.171
Explained	14246.610	10	1424.661	9.140	.000
Residual	19483.125	125	155.865		
Total	33729.735	135	249.850		
Multiple R = .650. Multiple R ² = .422.					

statistical insignificance with the addition of the three new covariates whereas gender and age remain powerful predictors. Level of instruction, too, is no longer a significant predictor whereas it was a weak predictor of delinquency for the four-school, athletes-only sample. Employment is again not a statistically significant predictor of delinquency for the athletes of three-school sample just as it was not for the athletes of the four-school sample. A look at the relationship of the covariates with delinquency suggests that sport motivation "cooperation", social desirability, and to a lesser degree, physical activity "duration", account for a significant portion of the relationship whereas sport motivation "aggression" does not. Neither does rural/urban location of school, which is not surprising in that it was not a significant predictor of delinquency for the four-school, athletes-only sample.

Thus, in this analysis, five variables account for by far the largest portion of the variance. They are in order of size: sport motivation "cooperation"; social desirability; duration of physical activity; gender and age. Essentially, once the effects of these variables are accounted for, the once strong relationship between PTC sport participation and delinquency weakens considerably. Table 49 illustrates the reduction in magnitude of PTC sport

Table 49

PTC Sport Participation and Overall Delinquent Behaviour Revisited - Delinquency Means - Athletes Only (3 Schools)

Delinquent Behaviour	Exclusive PTC Participation		
	No	Yes	<i>Eta/Beta</i>
Observed Means	11.31 <i>N</i> = 67	19.02 <i>N</i> = 133	.21*
Adjusted Means ^a	12.13 <i>N</i> = 47	16.58 <i>N</i> = 89	.13ns
Adjusted Means ^b	12.69 <i>N</i> = 47	16.28 <i>N</i> = 89	.11ns

* $p < .01$.

^aAdjusted for the co-variates.

^bAdjusted for the covariates and the other predictor variables.

participation's relationship with delinquency as the means are adjusted first, for the covariates (row 2), then for both the covariates and the other predictor variables (row 3). (Row 1 of the table provides the observed means). Again, one notes the large change in the mean delinquency level of the exclusive PTC sport participants accounted for by the effects of the covariates. It is larger than the adjustment in means accounted for by the effects of the other predictor variables.

Table 50 provides the listwise, zero order correlation coefficients of PTC sport participation with the five covariates (first section), the four other predictor variables (second section) and the criterion variable (third section). Of all these variables, PTC participation correlates significantly with only two of the covariates, that is, social desirability and sport motivation "cooperation", and with the criterion variable, overall delinquency. These results suggest that the delinquency variance accounted for jointly by PTC participation and by sport motivation "cooperation" is, in fact, largely accounted for by the latter variable, not PTC participation, in this population. Thus one may conclude that the relationship of sport motivation "cooperation" and delinquency is the more important one of this triad.

Table 50

Correlation Matrices^a: PTC Sport Participation Revisited

	ANCOVA Covariates				
	Social Desirability	Rural/Urban Location of School	Sport Motivation Cooperation	Sport Motivation Aggression	Physical Activity Duration
PTC Sport Participation	-.1581*	-.0841ns	-.1632*	-.0166ns	.0150ns

* $p < .10$.^aListwise, zero order correlation coefficients, $N = 136$.

	Delinquency Predictor Variables			
	Gender	Age	Level of Instruction	Employment
PTC Sport Participation	.0773ns	-.0623ns	.0206ns	.0567ns

^aListwise, zero order correlation coefficients, $N = 136$.

	Criterion Variable
	Overall Delinquency
PTC Sport Participation	.2485**

** $p < .01$.^aListwise, zero order correlation coefficients, $N = 136$.

Psychology of Criminal/Delinquent Conduct (PCC), Delinquency and Sport Participation

Three main variable clusters constitute the PCC approach to the prediction and understanding of delinquent behaviour. The variable clusters consist of scales measuring delinquent sentiments, delinquent personality and social support for delinquency and have been described in detail above. Tables 51, 52 and 53 present the zero order correlation matrices illustrating the relationship of the PCC variables with the various measures of delinquency. In every instance the correlations are significant at or beyond the .001 level of probability and indicate a strong concurrent relationship with the amount of delinquency committed. Table 54 presents the zero order correlations of a fourth, PCC related variable, a school-relevant measure of conventional success orientation (Value of Education Scale), which served as the measure of a student's identification with conventional values. This variable also correlates significantly with delinquency and in the expected direction, that is, negatively. These tables and the data contained therein, it is argued, provide substantive evidence for the validity of the self-report delinquency data in that the associations they portray serve, in fact, as strong measures of convergent validity.

The "sub-scales" of each of the three PCC variables

Table 51

Zero Order Correlation Matrix: Measures of Delinquent Behaviour and Delinquent Sentiments Scales

Delinquent Behaviour	Delinquent Sentiments (DS)					
	Law ^a	Courts ^a	Police ^a	Toward Law Violation ^b	Identification - Delinquent Others ^b	DS Total ^c
Overall Delinquent Behaviour	-.4335*	-.2834*	-.4127*	.5877*	.5160*	.5603*
Delinquent Behaviour - Seriousness	-.4354*	-.2956*	-.4024*	.5689*	.5167*	.5561*
Acts Against Person	-.3730*	-.2582*	-.3344*	.4262*	.4058*	.4485*
Acts Against Property	-.3601*	-.2641*	-.3732*	.5119*	.4691*	.4968*
Substance Abuse Offences	-.3894*	-.2158*	-.3593*	.5158*	.4014*	.4751*
Traffic Offences	-.2253*	-.1327*	-.2033*	.3369*	.2781*	.2936*
Other Delinquent Offences	-.3690*	-.2476*	-.3528*	.5252*	.4800*	.4927*

* $p < .001$.

Pairwise correlations, N s range from 575 to 580.

^aHigh scale scores indicate positive attitude toward law/courts/police.

^bHigh scale scores indicate supportive attitude toward law violation/delinquent others.

^cLaw, courts and police scale scores reversed, high combined score indicates high delinquent sentiments.

Table 52

Zero Order Correlation Matrix: Measures of Delinquent Behaviour and Delinquent Personality Scales

Delinquent Behaviour	Delinquent Personality (DP) ^a				
	Psycho-pathy	Neuro-ticism	Inadequacy/Immaturity	Scholastic Maladjustment	DP Total
Overall Delinquent Behaviour	.6587*	.4699*	.4105*	.6554*	.6460*
Delinquent Behaviour - Seriousness	.6547*	.5035*	.4360*	.6592*	.6629*
Acts Against Person	.5412*	.4242*	.3286*	.5018*	.5376*
Acts Against Property	.5675*	.4112*	.3640*	.5568*	.5591*
Substance Abuse Offences	.4905*	.3298*	.3578*	.5522*	.4938*
Traffic Offences	.4074*	.2916*	.2741*	.4136*	.4047*
Other Delinquent Offences	.6154*	.4273*	.3200*	.5757*	.5821*

* $p < .001$.

Pairwise correlations, *Ns* range from 573 to 577.

^aHigh scale scores indicate increased delinquent personality traits.

Table 53

Zero Order Correlation Matrix: Measures of Delinquent Behaviour and Social Support for Delinquency Scales

Delinquent Behaviour	Social Support for Delinquency (SSFD) ^a						
	Thieves	Aggressors	Delinquent Others	Delinquent Roles	Delinquent Models	Delinquent R & M	SSFD Total
Overall Delinquent Behaviour	.6015*	.5539*	.6201*	.5875*	.4535*	.5887*	.6665*
Delinquent Behaviour - Seriousness	.5845*	.5491*	.6094*	.5875*	.4535*	.5887*	.6568*
Acts Against Person	.4746*	.4760*	.5127*	.4185*	.3028*	.4071*	.4934*
Acts Against Property	.5375*	.4490*	.5284*	.5086*	.4042*	.5154*	.5779*
Substance Abuse Offences	.5223*	.4497*	.5208*	.5559*	.4508*	.5683*	.6110*
Traffic Offences	.3197*	.3443*	.3573*	.3454*	.2551*	.3420*	.3862*
Other Delinquent Offences	.5183*	.4987*	.5455*	.4920*	.3675*	.4869*	.5660*

* $p < .001$.Pairwise correlations. *Ns* range between 568 and 571.^aHigh scale scores indicates high social support for delinquency.

Table 54

Zero Order Correlation Matrix: Measures of Delinquency and Conventional Values Scale

Delinquent Behaviour	Conventional Values
	Value of Education ^a
Overall Delinquent Behaviour	-.3484*
Delinquent Behaviour - Seriousness	-.3534*
Acts Against Person	-.2962*
Acts Against Property	-.2747*
Substance Abuse Offences	-.3064*
Traffic Offences	-.1873*
Other Delinquent Offences	-.3152*

* $p < .001$.

Pairwise correlations, $N_s = 567$.

^aHigh scale score indicates high value of education.

were combined in such a manner as to give a single measure for each of them. This was done in order to examine the relationship of these delinquency related variables (along with the conventional values measure) with the other major variables of the study. The PCC variables, continuous in nature, were then introduced into the appropriate, total-sample ANCOVA as covariates. Table 55 provides the outcome of this analysis. PTC sport participation, gender, age and rural/urban location of school retain their status as statistically significant predictors of level of delinquency, while the predictive power of the level of instruction variable weakens considerably ($\beta = .05$, $p < .10$). More interestingly, a comparison of the five covariates, indicates that social support for delinquency accounts for the major portion of the covariate explained variance followed by delinquent personality, delinquent sentiments, social desirability and, lastly, value of education.

Table 56 provides data concerning the observed and adjusted delinquency means of the predictor variables. One notes from a comparison of the three sets of means, that adjustment for the covariates accounts for a substantial reduction in delinquency means (row 2 means compared to row 1 means) moreso than does adjustment for the other predictor variables (row 3 compared to row 2). Moreover, the largest

Table 55

ANCOVA Table - Main Predictor Variables, PCC Variables and Overall Delinquency

	DBOVERAL	overall del. beh. in last year only			
by	PTC	team,newpop.,contact - exclusive			
	SEX	gender			
	AGE	age - 2 levels			
	RURURB	schools - 2 grps. - rural/urban			
	LEVEL	general l.of instr. vs. everything else			
	JOB	employment - yes or no			
with	SOCDESIR	social desir./response style			
	DELSENT	dslawr + dscrtsr + dspolr + dstlv + dsid			
	DELPERS	dppsytot + dpneutot + dpiitot + dpsmtot			
	SSFD	ssfdtt + ssfdta + ssfdr + ssfdm			
	VALEDUC	value of education			
EXPERIMENTAL sums of squares					
Covariates entered FIRST					
Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Covariates	59862.533	5	11972.507	138.095	.000
SOCDESIR	372.413	1	372.413	4.296	.039
DELSENT	1112.730	1	1112.730	12.835	.000
DELPERS	4643.835	1	4643.835	53.563	.000
SocSuppForDel	11173.610	1	11173.610	128.880	.000
VALUEDUC	258.734	1	258.734	2.984	.085
Main Effects	4455.780	6	742.630	8.566	.000
PTC	1594.321	1	1594.321	18.389	.000
SEX	947.767	1	947.767	10.932	.001
GENDER	627.283	1	627.283	7.235	.007
RURURB	598.356	1	598.356	6.902	.009
LEVEL	247.480	1	247.480	2.855	.092
JOB	102.959	1	102.959	1.188	.276
Explained	64318.312	11	5847.119	67.443	.000
Residual	44475.973	513	86.698		
Total	108794.286	524	207.623		
Multiple R = .769. Multiple R ² = .591.					

Table 56

Main Predictor Variables and PCC Variables - Overall Delinquency Means

Predictor Variables												
Del. Beh. Means	Exclusive PTC Sport Participation		Gender		Age		Location Of School		Level of Instruction		Employment	
	No	Yes	Females	Males	14-15	16-19	Rural	Urban	Other	General	No	Yes
Obs.	11.36	17.23	9.16	17.97	10.49	14.99	11.99	15.31	12.09	18.42	12.07	14.65
<i>N</i>	382	198	308	271	202	374	345	237	467	115	292	287
<i>t</i> / <i>z</i> / <i>χ</i> ²	.19****		.30****		.15****		.11***		.17****		.09**	
Adj. ^a	11.85	15.66	11.66	14.68	11.66	13.99	12.10	14.52	13.37	11.99	12.27	14.01
<i>N</i>	352	180	291	242	182	347	312	222	433	101	269	264
<i>Beta</i>	.12****		.11****		.08****		.08****		.04ns		.06**	
Adj. ^b	11.86	15.64	11.84	14.68	11.55	13.98	12.23	14.43	13.50	11.60	12.69	13.60
<i>N</i>	347	178	285	240	181	344	308	217	429	99	265	260
<i>Beta</i>	.12****		.10****		.08****		.08****		.05*		.03ns	

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.^aAdjusted for the covariates.^bAdjusted for the covariates and the predictor variables.

changes in means occur for those groups now known to commit higher levels of delinquency, that is, exclusive PTC sport participants, males, and general level of instruction students. This relationship also holds true, but to smaller degree, for older students and urban students. Of particular interest is the change in delinquency means for the general level of instruction students. With the effects of the PCC covariates removed, that is, pro-delinquency sentiments, personality traits and social contacts, these students display less delinquency than their comparison group. Table 57 contains the zero order correlations between the covariates and the predictor variables.

The zero order correlations between PTC sport participation, general sport participation and the covariates are presented in Table 58. Two of the PCC variables--delinquent sentiments and delinquent personality correlate significantly with PTC participation (row 1 of the table). General sport participation, on the other hand, does not correlate significantly with any of the PCC variables (row 2). These findings suggested a further examination of the relationships between the two sport participation variables and the PCC variables. Table 59 presents the relevant ANCOVA table. All but one of the variables, whether predictor or covariate, retain their essential relationship with overall delinquency and with

Table 57

Correlation Matrix: PCC Variables and Predictor Variables

	ANCOVA Covariates				
ANCOVA Predictor Variables	Social Desirability	Delinquent Sentiments	Delinquent Personality	Social Support for Delinquency	Value of Education
PTC Sport Participation ^a	-.0864**	.1004**	.0996**	.0683ns	.0047ns
Gender ^a	-.1047**	.2208***	.2207***	.2232***	-.0944ns
Age ^a	-.0087ns	.0589ns	.0414ns	.1451***	-.1469***
School Rural/Urban ^a	-.0155ns	-.0153ns	-.0110ns	.0283ns	.0083ns
Level of Instruction ^a	-.0193ns	.1903***	.3112***	.1584***	-.1654***
Employment ^a	.0125ns	-.0485ns	-.0188ns	.0452ns	.0294ns
Sport Mot. Cooperation ^b	.1264ns	-.3416***	-.3320***	-.3450***	.2626***

* $p < .10$; ** $p < .05$; *** $p < .01$.

^aListwise, zero order correlation coefficients, $N = 525$.

^bPairwise, zero order correlation coefficients, N s range from 165 to 177.

Table 58

Correlation Matrix^a: PCC Variables and Sport Participation Variables

	ANCOVA Covariates				
Sport Participation	Social Desirability	Delinquent Sentiments	Delinquent Personality	Social Support for Delinquency	Value of Education
PTC	-.0864**	.1004**	.0996**	.0683ns	.0047ns
General	-.0725*	-.0360ns	-.0390ns	-.0042ns	.0693ns

* $p < .10$; ** $p < .05$.

^aListwise, zero order correlation coefficients, $N = 525$.

Table 59

ANCOVA Table - Main Predictor Variables, PCC Variables and Overall Delinquency

	DBOVERAL	overall del. beh. in last year only			
by	SPORPART	organized sport participation - yes or no			
	PTC	team,newpop.,contact - exclusive			
	SEX	gender			
	AGE	age - 2 levels			
	RURURB	schools - 2 grps. - rural/urban			
	LEVEL	general l.of instr. vs. everything else			
	JOB	employment - yes or no			
with	SOCDESIR	social desir./response style			
	DELSENT	dslawr + dscrtsr + dspolr + dstlv + dsid			
	DELPERS	dppsytot + dpneutot + dpiitot + dpsmtot			
	SSFD	ssfdtt + ssfdta + ssfdr + ssfdm			
	VALEDUC	value of education			
EXPERIMENTAL sums of squares					
Covariates entered FIRST					
Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
Covariates	59862.533	5	11972.507	138.933	.000
SOCDESIR	372.413	1	372.413	4.322	.038
DELSENT	1112.730	1	1112.730	12.912	.000
DELPERS	4643.835	1	4643.835	53.888	.000
SocSuppForDel	11173.610	1	11173.610	129.662	.000
VALUEEDUC	258.734	1	258.734	3.002	.084
Main Effects	4810.200	7	687.171	7.974	.000
SPORPART	354.420	1	354.420	4.113	.043
PTC	299.519	1	299.519	3.476	.063
GENDER	769.543	1	769.543	8.930	.003
AGE	710.199	1	710.199	8.241	.004
RURURB	644.102	1	644.102	7.474	.006
LEVEL	204.375	1	204.375	2.372	.124
JOB	52.925	1	52.925	.614	.434
Explained	64672.733	12	5389.394	62.450	.000
Residual	44121.553	512	86.175		
Total	108794.286	524	207.623		
Multiple R = .771. Multiple R ² = .594.					

each other. However, PTC sport participation is seen to lose strength as a predictor; general sport participation would now seem to be the more effective sport participation predictor of delinquency.

Table 60 provides the observed and adjusted delinquency means for the two sport participation variables. The means for general sport participation do not vary a great deal from their observed values (section 1) through to their adjusted-for-all-variables (section 3). Not so for the PTC delinquency means. As we have already seen, removal of the effects of the covariates (notably the two PCC variables) substantially reduces the means of the exclusive PTC participation group (i.e., the "yes" group). These data point to the conclusion that the students of this latter group display greater degrees of attitudes, values, beliefs and personality traits that favour the committal of delinquent acts than do other athletes or other students in general.

Participation in Specific Sports and Delinquency

A comparison of the different sports played was undertaken with a view to determining the relative efficacy of a specific sport as a predictor of overall delinquency in the past year amongst the total student sample. The nine sports with the most participants were examined along with

Table 60

Sport Participation Predictor Variables and PCC Variables - Overall Delinquency Means

Criterion Variable	Predictor Variables			
Delinquent Behaviour	General Sport Participation		Exclusive PTC Sport Participation	
Means	No	Yes	No	Yes
Observed	11.55	14.91	11.36	17.23
<i>N</i>	267	313	382	198
<i>Eta</i>	.11***		.19****	
Adjusted ^a	11.14	14.90	11.85	15.66
<i>N</i>	249	283	352	180
<i>Beta</i>	.13****		.12****	
Adjusted ^b	11.90	14.22	12.40	14.59
<i>N</i>	244	281	347	178
<i>Beta</i>	.08**		.07*	

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aAdjusted for the covariates.

^bAdjusted for the covariates and the predictor variables.

an "other sport" group which consisted of all of the remaining sports listed but which did not have a participation level of greater than fifteen students (see Table E1, Appendix E). Included with the nine specific sports was a category termed "athletics" which consisted of participants in both track & field and cross country. These data were submitted to an ANCOVA with social desirability and the standard predictor variables (aside from sport participation), that is, gender, age, rural/urban location of school, level of instruction and employment, serving as covariates, the ten sport categories as the predictor variables and overall delinquency as the criterion variable. Table 61 presents the resulting ANCOVA table. One notes that participation in two of the sports--baseball ($F = 12.217$, $p < .001$, $\beta = .15$) and soccer ($F = 10.301$, $p < .001$, $\beta = .13$)--significantly predict a higher level of delinquency for their participants when compared to non-baseball or soccer playing students.

Table 62 provides a breakdown of the observed and adjusted means for the ten sports. In terms of the observed scores (row 1), participation in hockey, baseball, football, soccer and rugby corresponds to significantly higher reported levels of delinquency compared to non-participation in those sports. Participation in volleyball and swimming, on the other hand, is related significantly to lower levels

Table 61

Specific Sports Played and Overall Delinquency - ANCOVA Table

by DBOVERAL overall del. beh. in last year only HOCKEY BASEBALL FOOTBALL BASKBALL VOLYBALL SOCCER SWIMMING ATHLETCS RUGBY OTHER rest of sports with SOCDESIR social desir./response style GENDER AGE 2 levels SCHOOL rural/urban location LEVEL level of instruction JOB after school employment EXPERIMENTAL sums of squares Covariates entered FIRST					
Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Covariates	23079.891	6	3846.648	22.767	.00
SocDesir, Gender, Age, School, Level, Job					
Main Effects	5231.082	10	523.108	3.096	.001
HOCKEY	13.803	1	13.803	.082	.775
BASEBALL	2064.121	1	2064.121	12.217	.001
FOOTBALL	15.729	1	15.729	.093	.760
BASKETBALL	220.412	1	220.412	1.305	.254
VOLLLEYBALL	352.931	1	352.931	2.089	.149
SOCCER	1740.467	1	1740.467	10.301	.007
SWIMMING	122.001	1	122.001	.722	.396
ATHLETCS	4.904	1	4.904	.029	.065
RUGBY	4.431	1	4.431	.026	.871
OTHER	163.977	1	163.977	.971	.325
Explained	28310.973	16	1769.436	10.473	.00
Residual	89041.431	527	168.959		
Total	117352.414	543	216.119		
Multiple R = .491. Multiple R ² = .241.					

Table 62

Participation in Specific Sports: Overall Delinquency Means

Del. Beh.	Name of Sport										
	Hockey			Baseball			Football		Basketball		
Means	No	Yes	<i>t</i> /df/ <i>Beta</i>	No	Yes	<i>t</i> /df/ <i>Beta</i>	No	Yes	<i>t</i> /df/ <i>Beta</i>	<i>t</i> /df/ <i>Beta</i>	
Observed	12.25 <i>N</i> = 497	19.71 <i>N</i> = 85	.18***	11.86 <i>N</i> = 430	17.53 <i>N</i> = 152	.17***	13.00 <i>N</i> = 547	18.71 <i>N</i> = 35	13.63 <i>N</i> = 491	11.76 <i>N</i> = 91	.05ns
Adjusted ^a	12.94 <i>N</i> = 463	15.61 <i>N</i> = 81	.06ns	12.00 <i>N</i> = 400	17.07 <i>N</i> = 144	.15***	13.30 <i>N</i> = 514	13.94 <i>N</i> = 30	13.59 <i>N</i> = 460	11.95 <i>N</i> = 84	.04ns
Adjusted ^b	13.26 <i>N</i> = 463	13.78 <i>N</i> = 81	.01ns	12.03 <i>N</i> = 400	16.99 <i>N</i> = 144	.15***	13.39 <i>N</i> = 514	12.52 <i>N</i> = 30	13.66 <i>N</i> = 460	11.59 <i>N</i> = 84	.05ns

	Volleyball			Soccer			Swimming			Athletics		
	No	Yes	<i>t</i> /df/ <i>Beta</i>	No	Yes	<i>t</i> /df/ <i>Beta</i>	No	Yes	<i>t</i> /df/ <i>Beta</i>	No	Yes	<i>t</i> /df/ <i>Beta</i>
Observed	13.77 <i>N</i> = 518	9.86 <i>N</i> = 64	.08***	12.67 <i>N</i> = 487	16.77 <i>N</i> = 95	.10**	13.69 <i>N</i> = 552	6.90 <i>N</i> = 30	13.61 <i>N</i> = 532	10.48 <i>N</i> = 50		.06ns
Adjusted ^a	13.52 <i>N</i> = 482	11.93 <i>N</i> = 62	.03ns	12.50 <i>N</i> = 455	17.64 <i>N</i> = 89	.13***	13.43 <i>N</i> = 514	11.79 <i>N</i> = 30	13.48 <i>N</i> = 498	11.83 <i>N</i> = 46		.03ns
Adjusted ^b	13.68 <i>N</i> = 482	10.72 <i>N</i> = 62	.06ns	12.48 <i>N</i> = 455	17.74 <i>N</i> = 89	.13***	13.46 <i>N</i> = 514	11.29 <i>N</i> = 30	13.37 <i>N</i> = 498	13.00 <i>N</i> = 46		.01ns

	Rugby			Other		
	No	Yes	<i>t</i> /df/ <i>Beta</i>	No	Yes	<i>t</i> /df/ <i>Beta</i>
Observed	13.12 <i>N</i> = 559	18.78 <i>N</i> = 23	.08*	13.48 <i>N</i> = 486	12.62 <i>N</i> = 96	.02ns
Adjusted ^a	13.36 <i>N</i> = 524	12.81 <i>N</i> = 20	.01ns	13.56 <i>N</i> = 457	12.79 <i>N</i> = 87	.02ns
Adjusted ^b	13.36 <i>N</i> = 524	12.82 <i>N</i> = 20	.01ns	13.59 <i>N</i> = 457	12.18 <i>N</i> = 87	.04ns

p* < .10; *p* < .05; ****p* < .001.^aAdjusted for the co-variables.^bAdjusted for the co-variables and the other predictor variables.

of delinquency and, in terms of trend only, so too are basketball, athletics and the "other" sports category. Adjustment of the delinquency means for the covariates reduces the number of sports related to higher levels of delinquency to two: baseball and soccer. No sports are identified as significantly relating to lower levels of delinquency after adjustment although the trend remains for volleyball and swimming as well as for others.

Finally, when adjustments to the means are made for the effects of both the covariates and the other predictor sport variables, baseball and soccer participants continue to display significantly higher levels of delinquency than their comparison groups. Participants in four other sports display a trend toward lower levels of delinquency; these are volleyball, basketball, swimming, and "other" sports. Two sports display an interesting shift or reversal of delinquency means in terms of level of delinquency. The observed means of the participants in football and rugby suggest higher levels of delinquency. Yet, when they are adjusted for either the covariates (football) or the covariates and the sport predictor variables (rugby), they resultantly suggest lower levels of delinquency at least in terms of trend. Participation in the two remaining sports, hockey and athletics, indicates a minimal or no relationship with delinquency levels.

Table 63 compares the observed delinquency means for each specific sport played of the total sample with the athletes-only sample. Note that, in the athletes-only sample, the means of the non-participant groups for each sport (athletes nonetheless) are higher than the total sample non-participants means. This, of course, is due to the fact that athletes report higher levels of delinquency than non-athletes. Most of the relationships between level of delinquency and participation in a particular sport hold for the observed means of both samples. There are a few interesting differences, however. For the athletes-only sample, participation in basketball is significantly linked to a lower level of delinquency which is only suggested in the total sample. The same holds true for participation in athletics and in "other" sports. On the other hand, participation in soccer, football and rugby are not significantly linked to higher levels of delinquency for the athlete-only sample although, in all three cases, the trend is in that direction.

Table 6.3

Participation in Specific Sports - Comparison of Observed Overall Delinquency Means from Total Sample and Athletics-Only Sample

Del. Beh.	Name of Sport											
	Hockey			Baseball			Football			Basketball		
Means	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>
Obs. ^a	12.25 <i>N</i> = 497	19.71 <i>N</i> = 85	.18****	11.86 <i>N</i> = 430	17.53 <i>N</i> = 152	.17****	13.00 <i>N</i> = 547	18.71 <i>N</i> = 35	.09**	13.63 <i>N</i> = 491	11.76 <i>N</i> = 91	.05ns
Obs. ^b	13.12 <i>N</i> = 228	19.71 <i>N</i> = 85	.19****	12.44 <i>N</i> = 161	17.53 <i>N</i> = 152	.16****	14.43 <i>N</i> = 278	18.71 <i>N</i> = 35	.09ns	16.20 <i>N</i> = 222	11.76 <i>N</i> = 91	.13**

	Volleyball			Soccer			Swimming			Athletics		
	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>
Means	13.77	9.86		12.67	16.77		13.69	6.90		13.61	10.48	
Obs. ^a	<i>N</i> = 518	<i>N</i> = 64	.08**	<i>N</i> = 487	<i>N</i> = 95	.10**	<i>N</i> = 552	<i>N</i> = 30	.10**	<i>N</i> = 532	<i>N</i> = 50	.06ns
Obs. ^b	16.21 <i>N</i> = 249	9.86 <i>N</i> = 64	.16**	14.10 <i>N</i> = 218	16.77 <i>N</i> = 95	.08ns	15.76 <i>N</i> = 283	6.90 <i>N</i> = 30	.17***	15.75 <i>N</i> = 263	10.48 <i>N</i> = 50	.12**

* $p < .10$; ** $p < .05$; *** $p < .01$; **** $p < .001$.

^aTotal Sample.

^bAthletics-only sample.

	Rugby			Other		
	No	Yes	<i>t</i> / <i>z</i>	No	Yes	<i>t</i> / <i>z</i>
Means						
Obs. ^a	13.12 <i>N</i> = 559	18.78 <i>N</i> = 23	.08*	13.48 <i>N</i> = 486	12.62 <i>N</i> = 96	.02ns
Obs. ^b	14.60 <i>N</i> = 290	18.78 <i>N</i> = 23	.07ns	15.92 <i>N</i> = 217	12.62 <i>N</i> = 96	.10*

Additional Sport Participation Data

Reasons for Having Stopped Playing Organized Sports.

The non-athlete students of the four secondary schools sampled were asked whether or not they had recently stopped participating in organized sports and, if so, what were their reasons for doing so. A dichotomous predictor variable--"yes" or "no" responses to the first part of the question--was created. An ANCOVA was performed on these data with overall delinquency as the criterion variable and social desirability as the covariate. Non-athlete students who had recently ceased participating in organized sport commit significantly more delinquency ($F = 5.626, p < .05$) than non-athlete students who had not done so or who had never participated. Table 64 provides the reasons, grouped according to theme, cited by the now non-athletes for their ceasing to participate in organized sport.

Reasons for Liking to Play Organized Sport. The athletes from one of the secondary schools (School A) were asked whether or not they liked playing organized sport. Of the one hundred and fourteen athlete respondents, only one (a male) indicated that he did not like the experience. One hundred and eleven athletes indicated that they liked the experience, many providing more than one reason. Table 65 provides the reasons cited by these students for their liking the experience.

Table 64

Reasons for Having Stopped Playing Organized Sports

<u>REASON</u>	<u>FREQUENCY*</u>
<u>Time Pressures</u>	<u>71</u>
- job	16
- school work	17
- no time	36
- wanted to work	2
<u>Dissatisfaction/Problems</u>	<u>35</u>
- kicked off team	2
- got boring	2
- lacked interest/didn't feel like it anymore	8
- too competitive	7
- too many cliques	2
- fighting	1
- problems with teammates	4
- sport was too expensive	3
- coach (too serious)	3
- don't like rules	1
- didn't play much	2
<u>Injury/Illness/Health</u>	<u>25</u>
- started to smoke/can't quit smoking/out of shape	2
- injury (bad back, bad knee)	17
- illness	5
- car accident which has limited my physical ability	1
<u>Limited Opportunity/Motivation</u>	<u>25</u>
- parents	2
- just moved, don't know anyone/moved to a rural area	8
- no age group in the sports like	2
- not going to help in my future	1
- live in rural area, transportation to practices and games was too much of a hassle	5
- sport I prefer not offered in this area (rugby)	2
- friends don't play sports	3
- not enough teams (in rural community)	1
- changed schools	1
<u>Other Interests</u>	<u>9</u>
- to train for something else (air cadet competition/music-symphony)	4
- enjoy non-organized sports more	2
- too many extra-curricular interests	3
<u>Doubted Abilities</u>	<u>7</u>
- wasn't very good (after moved to a larger school)	4
- no growth spurt, got scared (hockey goalie)	1
- feel not good enough for any school team	1
- self-conscious/low self-esteem	1

*Seventy-seven students reported having recently stopped playing organized sports. Students often cited more than one reason.

Table 65

Reasons for Liking to Play Organized Sport

<u>REASON</u>	<u>FREQUENCY</u>	<u>REASON</u>	<u>FREQUENCY</u>
<u>Have fun</u>	<u>61</u>	<u>Team</u>	<u>30</u>
- have fun	36	- be on a team	12
- always something to do/get out of house	12	- work as a team (cooperation?)	13
- interesting/exciting	2	- togetherness/common bond	5
- like to run/love ice sports	2		
- love being active, being involved	3	<u>Organized/Structured</u>	<u>15</u>
- enjoy it	6	- fair/everyone knows the rules	4
<u>Socializing</u>	<u>40</u>	- no arguing about who is on the team	3
- socializing (including meeting new people)	38	- because it's well organized	7
- friendship	2	- like the coach/administration/scheduled games	1
<u>Challenge/Self-esteem</u>	<u>40</u>	<u>Travel</u>	<u>9</u>
- challenging/improve skills/physical challenge	19	- new places/travel	6
- improve yourself/build character	7	- tournaments	2
- self esteem	7	- play more teams	1
- rewarding feeling of doing your best/achieve	7		
<u>Competition</u>	<u>35</u>	<u>Winning/Rewards</u>	<u>9</u>
- competition	34	- winning	7
- play aggressively	1	- getting the reward	1
		- looks good on job application	1
<u>Fitness</u>	<u>32</u>		
- fitness	24	<u>Learning</u>	<u>8</u>
- very athletic/talented	3	- learning sportsmanship	2
- reduces stress	1	- learn skills/experience	4
- the rush of pushing body to top physical extreme	1	- the stories	1
- working hard	2	- learn how to accept criticism	1
- builds coordination	1		
		<u>Miscellaneous</u>	<u>2</u>
		- inexpensive	1
		- no one gets hurt	1

Reasons for Not Liking to Play Organized Sport.

Student athletes of School A who played organized sports were asked what it was about the experience that they did not like. Although only one athlete indicated not liking participating in organized sport and therefore responded to this question, seven other athletes also responded, several giving more than one response. The reasons cited, grouped by theme, are presented in Table 66.

Table 66

Reasons For Not Liking Playing Organized Sport

<u>REASON</u>	<u>FREQUENCY</u>
<u>Too serious/too competitive</u>	<u>4</u>
- pressure to do well	1
- too serious/too competitive	1
- when winning is the only thing	1
- when it is not fun	1
<u>Too organized</u>	<u>2</u>
- too many rules	1
- practising	1
<u>Coaching</u>	<u>2</u>
- getting benched for no reason	1
- coaches ridiculing players in front of others	1
<u>No time/takes a lot of time</u>	2
<u>Disappointment of not doing well</u>	1
<u>Rely on one person to win games</u>	1

Discussion

The central purpose of this study was to examine the relationship, in an adolescent population, of participation in organized sport with the level of delinquent behaviour committed. Sport participation was defined in three different ways: 1) general participation, that is, either one participated in organized sport(s) or one did not; 2) varsity sport participation, whereby the location or sponsorship of the organized sport(s) became an important consideration; and 3) PTC sport participation, whereby the kind or nature of the organized sport(s) one engaged in was a defining factor, that is, did, or did not, an athlete participate exclusively in popular and/or team and/or contact sports?

To greater or lesser degree, all three sport participation variables demonstrate a significant relationship with delinquency but not in the direction hypothesized. Participation in organized sport is found to be associated with higher levels of delinquency. Closer examination of the different sport participation variables indicates that the kind of sport in which one participates, that is, popular, team or contact, is the most effective predictor of delinquency and that, within this domain,

exclusive participation in team sports demonstrates the strongest association with higher levels of delinquency.

The extant literature, in which a relationship has been found, has concentrated on the relationship of high school, intervarsity athletic participation. This sampling approach has resulted, of course, in the inclusion of varsity-only athletes and mixed varsity-only and community-based athletes. It has also resulted, however, in the exclusion of students who participate solely in organized sport in the community. This exclusive definition of sport participation is considered to be overly narrow both in concept and in definition (cf., McCormack & Chalip, 1988).

Interestingly, the present study (where all organized sport participation has been included for consideration) found that the number of students participating solely in community-based organized sport is greater (i.e., 100) than the number of students participating solely in varsity sports (i.e., 40). Moreover, the level of delinquency of the community-based athletes is seen to be, on average, higher than that of the varsity-only athletes (14.84 delinquent acts over the past year compared to 12.53). One may conclude from the foregoing that the representativeness of the athlete samples of the earlier studies is suspect, at least in a Canadian context, and that the generalizability of the findings of that research is certainly questionable.

Consideration of the seriousness and the type of delinquency committed resulted in similar findings regarding general sport participation and PTC sport participation. PTC participation is an effective predictor of both higher level of serious delinquency and of higher levels of all five types of delinquency. General participation, on the other hand, is a predictor (weaker than PTC participation) of only higher levels of substance abuse offences, traffic offences and "other" offences.

Several other major delinquency predictor variables were examined. Not surprisingly, gender is seen to be one of the most powerful predictors of delinquent behaviour (cf., Andrews & Bonta, 1994). Males commit significantly more delinquency than females on all measures of the criterion variable. However, the effect of gender is not, contrary to the hypothesis generated from the work of Segrave and his colleagues (e.g., 1982, 1983), mediated by organized sport participation. Recall that the hypothesis predicted that both male and female athletes would be less delinquent than their respective male and female non-participant comparison groups. With one exception, both male and female athletes, across all three sport participation variables, are found to commit a *higher* level of mean delinquent behaviour in the past year, at least in terms of trend, than the relevant comparison groups. The

sole exception is the case of the male varsity-only athletes. This small group of 19 student-athletes reports less overall delinquency than the male non-participant group.

The hypothesis generated from the literature concerning a negative relationship between the age of sport participants and level of delinquency is not supported by the current research. Younger athletes (i.e., ages 14 and 15) are significantly less delinquent than older athletes (ages 16 to 19 inclusive). The same finding holds true for the total sample population consisting of both athletes and non-athletes. The younger age group commits significantly less delinquency on four of the seven delinquency measures. One should not be surprised by these outcomes in that, typically during the so-called adolescent years from the age of twelve until approximately the age of twenty-two, delinquency is known to increase with age (Andrews & Bonta, 1994). Therefore one is unable to attribute, as the hypothesis suggests, a mediating role to participation in organized sport to the established age/delinquency relationship.

Another hypothesis predicted that rates of delinquency of student athletes would vary depending upon the visibility and importance of the athletic activity to the local community in which their school was located. Specifically,

it was felt that athletes who participated in sport events conducted in smaller, more rural communities would commit less delinquency than those whose athletic activities took place in larger, urban settings. The genesis of this hypothesis was based on retrospective longitudinal research (Stark et al., 1987) which indicated that the effect of organized varsity sport participation on delinquency was reformatory over time for both black and white students but that, in the case of the latter, visibility and importance of the sporting event to the community were important moderator variables.

It was found that rural student athletes are significantly less delinquent than their urban counterparts. However, when the mean delinquency levels of the two groups are adjusted for social desirability bias in responding to the questionnaire and for the effect of the other major predictor variables, the differences between them are no longer statistically significant. Still, urban athletes do demonstrate higher levels of delinquency in terms of trend.

Whether these outcomes can be used as evidence in favour of the hypothesis is therefore moot. Of note, when considering the derived criterion variable measures for the total sample in relation to rural/urban location of school, is the outcome that urban students committed significantly more

serious offences, more offences against property and more substance abuse offences than rural students.

The relationship of two other variables, which have been labelled demographic variables for the purposes of this study, with delinquency were examined. The possibility of their relevance to delinquency did not arise from the extant literature but rather from suggestions put forward by teachers (level of instruction) and colleagues (employment). General level of instruction turns out to be a statistically significant predictor of a higher mean level delinquency amongst both the total student sample and the athletes-only sample. That is, students receiving this level of instruction, whether athlete or non-athlete, report more delinquency than those who receive an advanced level of instruction or a blended level of instruction. Furthermore, with reference to the total sample, general level of instruction significantly predicted higher mean levels of serious delinquency, offences against persons, offences against property and traffic offences.

Outside-of-school-hours employment displays a statistically significant relationship with overall delinquency in the total sample both before and after adjustment for the covariate. Those who hold such jobs report a higher level of delinquency than those who do not. The relationship, although present in terms of direction, is

no longer statistically significant, however, once adjustment is made for the other major predictor variables. No statistically significant relationship is found in the athlete-only sample although, once again in terms of trend, those who are not employed report committing less delinquency than those who are both before and after adjustment. Neither did employment display a significant relationship with any of the other measures of delinquency in the total sample.

In summary to this point, several of the major predictor variables have proven to be statistically significant predictors of higher levels of overall delinquency when considering the total sample of students. These are: exclusive PTC sport participation; general sport participation; gender; age; rural/urban location of school; and level of instruction. However, when PCC risk-for-delinquency variables--delinquent sentiments, delinquent personality and social support for delinquency--are taken into consideration, the nature of the aforementioned associations with delinquency changes in interesting ways. For example, the adjusted delinquency means of the major predictors, that is, exclusive PTC sport participants, males, and general level of instruction students are reduced substantially. Reductions are also found, but to a lesser degree, for older students and urban students.

Of particular interest is the change in delinquency means for the general level of instruction students. With the effects of the PCC variables removed, these students display significantly lower mean levels of delinquency than their comparison group, those students receiving a blended or advanced level of instruction. This is a predictable outcome according to PCC theory. Many, but not all, of this group of students can be described, according to school staff, as displaying some or all of the following behaviours: below-average effort in school; lack of interest in school; often being bored by school; not particularly worried about one's occupational future; conduct problems (e.g., truancy); below average verbal intelligence; and weak problem solving skills. All classic, school-based risk factors for delinquency. When controls are introduced for some or all of these (and related) factors (i.e., the PCC variables), the level of delinquency for the group approaches that of their comparison group.

A similar outcome is found in relation to one of the sport participation variables. Exclusive PTC sport participation was seen to be the more powerful predictor of delinquency in comparison with general sport participation. However, when controls are introduced for delinquency risk factors (i.e., the PCC variables), one finds that general sport participation now accounts for more of the explained

variance than does PTC sport participation. One may therefore conclude that those athletes who participate exclusively in popular and/or team and/or contact sports are at greater risk to commit delinquent acts than are sport participants in general or are non-participants due to the former's higher levels of pro-delinquency attitudes, values, beliefs and personality traits.

The final hypothesis posited on the basis of the literature review had to do with the relationship between the quantity of sport participation and delinquency. It had been reported that the quantity of athletic participation varied inversely with delinquent behaviour. Of the four quantity measures utilized in this study, only one--hours per week spent playing and/or practising--was found to significantly correlate (partial correlation) with delinquent behaviour; specifically, it displayed a significant negative correlation with offences against persons.

With regard to the second employment variable--the number of hours-per-week employed students work--this variable is found to correlates significantly and positively with the measures of substance abuse offences and traffic offences. One possible interpretation of these results is that students who have more financial resources available can afford, and consequently may be more likely, to engage

in behaviours which could lead to offences in these two areas. That is, these individuals presumably have more disposable income which would allow them to more easily purchase drugs or alcohol or to own a motor vehicle.

Of the sport psychology variables introduced into the study, notable is the finding that the rate of delinquency for those athletes whose motivation for participating in organized sporting events is of a cooperative, helping nature, is significantly and *negatively* correlated with all the measures of delinquency save traffic offences and with all of the PCC delinquency risk factors. Conversely, the rate of delinquency for those athletes whose motivation for participation is of an aggressive nature is significantly and *positively* correlated with the same measures of delinquency and delinquency risk factors. And, the correlations between traffic offences and the two types of motivation, while not attaining statistical significance, are in the expected direction. None of the other variables derived from the sport psychology literature proved to have a noteworthy relationship with delinquency.

Only one of the physical activity and physical fitness variables displayed significant correlations with delinquency, that is, duration of physical activity. The longer one reports being engaged in physical activities over the two week period prior to responding to the questionnaire

the more delinquency of all kinds, save offences against property, one reports committing. While this result is interesting, a recent meta-analytic study evaluating outcomes of treatment programs targeting specific criminogenic and non-criminogenic need areas found that focusing on physical activity as a need area resulted in zero correlation with treatment effect size (Andrews, Dowden & Gendreau, 1998). In other words, increasing or improving one's physical activity, considered to be a non-criminogenic need area, does not seem to be related to reducing re-offending and therefore not an important risk factor from a PCC point of view.

In the context of the athletes-only sample, exclusive PTC sport participation, gender (males), age (older) and level of instruction (general) are the significant predictors of delinquency. In addition, three continuous variables--sport motivation "aggression", sport motivation "cooperation" and physical activity "duration"--also proved to be significantly correlated with overall delinquency for athletes. The examination of these two sets of variables in combination provided interesting results. Two variables survived as significant predictors of the criterion variable; these were: gender (being male) and age (being older). A third variable sport motivation "cooperation" demonstrated a powerful association (negative) with overall

delinquency such that, when accounted for in the statistical analysis (i.e., the controlling for the PTC participants non-cooperative motivational style), the PTC sport participation relationship with delinquency was reduced to statistical insignificance.

These findings are interesting in the light of the work of Orlick and his colleagues (Orlick, 1972, 1978a, 1978b, 1982; Orlick & Botterill, 1977) concerning the contribution of participation in play, games and sports to the social development of children. It is their thesis that cooperative approaches to such activities contribute to the learning of pro-social skills and to generally positive experiences which can spill over into other areas of a child's life. Competitive approaches, on the other hand, lead to the potential for negative social learning such as inappropriate aggressive behaviour, to negative experiences and to the potential for withdrawal from further participation.

It is interesting to note that many of the reasons cited by the students of this study for either liking to participate in organized sport, not liking to do so or for having stopped doing so, lend support to this view. By far, the majority of reasons cited for one's enjoyment of participation revolve around positive statements such as: having fun; socializing, togetherness of being on a team;

improving oneself and building self-esteem; achieving physical fitness; and following rules to ensure fairness. On the other hand, a near majority of the reasons cited for not liking to participate, although much fewer in number, centre on the competitive aspects of participation. In addition, roughly ten percent of those students who had recently stopped participating in organized sport cited such reasons as "too competitive", fighting, problems with teammates and too many cliques.

It is argued that the results of this study relating delinquency in athletes to different sport motivational approaches speak to the expected behavioural outcomes of the two approaches of cooperation and competition. Motivation to participate which is sustained or rewarded through social and cooperative mechanisms is significantly correlated with less negative social behaviour (i.e., delinquency) whereas motivation to participate which is aggressive in nature, presumably fostered in a competitive environment, is significantly correlated with higher levels of negative behaviour. Cooperative motivations and experiences can have positive effects on youngsters and youth during their participative experiences in organized sport activities. Simply put, such influences can play a useful role in the positive social development of the young participants or, stated more dramatically, can lead to that long sought after

and much talked about ideal--positive socialization/social development through participation in sport.

The examination of the predictive value of participation in a particular sport with regard to delinquency is interesting and, frankly, somewhat surprising. For the total student sample, baseball and soccer are seen to predict overall delinquency in a statistically significant manner. No sports are identified as significantly relating to lower levels of delinquency after adjustment of the means although there is a trend in that direction for volleyball, basketball, swimming and athletics. When the four-school, athlete-only sample is examined, most of the noted relationships between mean level of delinquency and participation in a particular sport hold. There are a few interesting differences, however. Participation in basketball is significantly linked to a lower level of delinquency which is only suggested in the total sample. The same holds true for participation in volleyball, athletics and in "other" sports. On the other hand, participation in soccer, football and rugby are not significantly linked to higher levels of delinquency although, in all three cases, the trend is in that direction.

In summary, in previous studies undertaken in the United States, the typical finding has taken the form that

youth who participate in varsity-only sport commit less delinquency, often significantly so, than the youth who do not participate (Coakley, 1993). In this study, participants in organized sport, more comprehensively defined than in the earlier studies, are found to commit more delinquent acts on average than non-participants. However, it is also demonstrated that that the locale of one's sport participation is an important consideration in the relationship, at least in a Canadian context. Varsity-only athletes do commit less delinquency than community-based and mixed locale athletes. Moreover, the kind of sport in which one participates (i.e., exclusive participation in popular and/or team and/or contact sports) effectively predicts one's delinquency level. The higher levels of delinquency of the PTC sport participants can be attributed to two things: a higher level of pro delinquency attitudes, values, beliefs and personality traits; and non-cooperative motivations for participation.

Secondly, From a PCC optic, it may be concluded that participation in organized sport, whatever the form of that participation takes, is a minor factor with regard to risk for delinquency. In the present study it accounted for between slightly over one per cent (general sport participation) and 3.6 per cent (PTC sport participation) of the total delinquency variance.

One reason why *general* sport participants commit more delinquency may be found in the likelihood that sport participants and delinquents share more of the risk factors that often put youth at risk for delinquency such as stimulus seeking behaviour (Donnelly, 1981; Zuckerman, 1982). However, in light of the outcomes noted regarding the differing relationships of specific sports with levels of delinquency, relationships between risk factors, sport participation and delinquency would seemingly have to be determined, in any future research, on a sport specific or type-of-sport specific basis (Silva, 1984; Fisher, 1984). Furthermore, it might be necessary to include sport specific levels of performance into the mix as well, for example, entrance, scholastic, collegiate, national, etc., levels (Silva, 1984). Additionally, other delinquency PCC risk factors not fully considered in this study but known to be of importance, such as broad history of early anti-social behaviour and familial risk factors (Andrews & Bonta, 1994), should be included for study (Cullen & Latessa, 1998). Lastly, when considering the differing delinquency levels of an athlete population only, the motivations that govern one's participation, that is, cooperative or aggressive particularly, would have to be taken into account. Interesting future research possibilities abound.

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APPENDIX A

The Instrument

INTRODUCTION

(All Schools)

The purpose of this exercise is to find out how young adults see the world around them, how they feel about the things they see and how they feel about the experiences they have had. The information we get will depend entirely upon your willingness to be thoughtful and honest in your answers.

You are asked answer several questionnaires. It will take approximately 45 to 50 minutes to complete them. The information gathered through the questionnaires will be collected anonymously (i.e., your name will not appear on the questionnaires) in order to ensure the confidentiality of your responses. The information gathered will not appear in any school records, it will not be seen by anybody other than the researchers involved in this study, and it will not be used for any other purpose than the research purposes outlined above.

It is important to know that this is not a test! Most of the questionnaire do not have right or wrong answers, or good or bad answers. The answers should be the ones that best show how you think and feel about what you see and do.

Your cooperation in completing these questionnaires is very much appreciated. THANK YOU.

DEMOGRAPHIC QUESTIONNAIRE
(All Schools)

PLEASE PROVIDE THE FOLLOWING INFORMATION

1. Age: _____.

2. Gender: (Please circle appropriate response).

Female

Male

3. Grade: _____.

4. Level of Instruction: (Please circle correct response).

General

Advanced

5. How would you describe the neighbourhood where you live?
(Please circle correct response.)

Rural
(farm)

Village
(less than 2000)

Town
(2000-10,000)

City
(over 10,000)

6. Do you have a job? (Please circle correct response.)

YES

NO

7. If you have a job, how many hours per week do you work?

_____.

SPORT QUESTIONNAIRE

(Administered to the students of School A only)

The term "organized sport" used in this questionnaire is defined as an individual or team sport that is organized by the school's athletic department or by a sport or service club in your community. Games or competitions are scheduled and played against teams or individuals representing other schools or other community sport or service clubs. The teams or individuals are coached by one or more adults. Games or competitions are regulated by an accepted and shared set of rules which are interpreted and applied by one or more independent officials who are in attendance at the event.

1. Do you play organized sports? (Circle correct response.)

YES

NO

IF YOU ANSWERED "YES" TO QUESTION 1, please answer questions 2 and 3.

IF YOU ANSWERED "NO" TO QUESTION 1, please answer questions 6 and 7 on page three.

2. Please provide the following information:

- a) the name the sport or sports you play;
- b) how long you have been playing;
- c) whether you play for your school, for a team or club in your community (i.e., not a school activity) or for both; and
- d) the number of hours per week you play and practice each sport.

For example :

<u>Sport(s)</u>	<u>Years</u>	<u>School/Community</u>	<u>Hours/Week</u>
Hockey	3	school	4
Ringette	4	community	3
Track & Field	1	school and community	7
Swimming	2	community	5

	<u>Sport(s)</u>	<u>Years</u>	<u>School/Community</u>	<u>Hours/Week</u>
A.	_____	_____	_____	_____
B.	_____	_____	_____	_____
C.	_____	_____	_____	_____
D.	_____	_____	_____	_____
E.	_____	_____	_____	_____
F.	_____	_____	_____	_____

3. Do you like playing organized sports? (Circle correct response.)

YES

NO

IF YOU ANSWERED "YES" TO QUESTION 3, please answer question 4 then go on to the next questionnaire.

IF YOU ANSWERED "NO" TO QUESTION 3, please answer question 5 then go on to the next questionnaire.

4. Please write down what is it you like about playing organized sports?

5. Please write down what is it that you do not like about playing organized sports?

6. If you answered "NO" to question 1, please write down how you like to spend your "free" time or "spare" time? (For example, certain recreational activities, or hobbies do you like to do; clubs you belong to; maybe you like to just hang out with friends at the mall; watching TV; etc.).

7. Have you recently stopped playing organized sports?
(Circle correct response.)

YES

NO

IF YOU ANSWERED "YES" TO QUESTION 7, please answer question 8 and then go on to the next questionnaire.

IF YOU ANSWERED "NO" TO QUESTION 7, please move go on to the next questionnaire.

8. Please give your reason(s) for having stopped playing organized sports.

SPORT ENJOYMENT

(School A Only)
(Not Used in Data Analysis)

We are interested in understanding why you play sports. If you do not participate in sports, we are interested in knowing your feelings about sport in general and why you think people get involved.

People play sport(s) for different reasons. On the next few pages, statements about why people play sports are compared to each other. For each comparison, you are asked to choose the statement that is most true for you. Please remember that there are no "right" or "wrong" answers.

PLEASE RESPOND TO EACH COMPARISON BY CHOOSING THE
STATEMENT THAT IS MOST TRUE FOR YOU

Please indicate which one of the statements presented in the comparisons below is most true for you by circling the letter to the left of the preferred statement.

PEOPLE ENJOY PLAYING SPORT BECAUSE:

1. A ...it gives them a chance to be with friends.
 OR
 B ...it gives them a chance to get rewards.

2. A ...they like doing the skills of the game.
 OR
 B ...they feel good when they have played well.

3. A ...they like the excitement of the game.
 OR
 B ...they like to improve their ability at the game.

4. A ...they like to win.
 OR
 B ...they like to test their ability against other
 players.

5. A ...they like to be a member of a team or club.
 OR
 B ...it gives them a chance to be with friends.

6. A ...their playing pleases others important to them.
 OR
 B ...it gives them a chance to get rewards.

7. A ...they like to improve their ability at the game.
 OR
 B ...they like doing the skills of the game.

8. A ...they like to test their ability against other
 players.
 OR
 B ...they like the excitement of the game.

9. A ...they like to be a member of a team or club.
 OR
 B ...they like to win.

Please indicate which one of the statements presented in the comparisons below is most true for you by circling the letter to the left of the preferred statement.

PEOPLE ENJOY PLAYING SPORT BECAUSE:

10. A ...it gives them a chance to be with friends.
 OR
 B ...their playing pleases others important to them.

- 11. A ...it gives them a chance to get rewards.
 OR
 B ...they feel good when they have played well.

- 12. A ...they like doing the skills of the game.
 OR
 B ...they like to test their ability against other
 players.

- 13. A ...they like the excitement of the game.
 OR
 B ...they like to be a member of a team or club.

- 14. A ...they like to win.
 OR
 B ...it gives them a chance to be with friends.

- 15. A ...they feel good when they have played well.
 OR
 B ...their playing pleases others important to them.

- 16. A ...they like to improve their ability at the game.
 OR
 B ...it gives them a chance to get rewards.

- 17. A ...they like to be a member of a team or club.
 OR
 B ...they like doing the skills of the game.

- 18. A ...they like to win.
 OR
 B ...they like the excitement of the game.

- 19. A ...it gives them a chance to be with friends.
 OR
 B ...they feel good when they have played well.

Please indicate which one of the statements presented in the comparisons below is most true for you by circling the letter to the left of the preferred statement.

PEOPLE ENJOY PLAYING SPORT BECAUSE:

20. A ...their playing pleases others important to them.
 OR
 B ...they like to improve their ability at the game.

21. A ...it gives them a chance to get rewards.
 OR
 B ...they like to test their ability against other
 players.

22. A ...they like doing the skills of the game.
 OR
 B ...they like to win.

23. A ...they like the excitement of the game.
 OR
 B ...it gives them a chance to be with friends.

24. A ...they like to improve their ability at the game.
 OR
 B ...they feel good when they have played well.

25. A ...they like to test their ability against other
 players.
 OR
 B ...their playing pleases others important to them.

26. A ...they like to be a member of a team or club.
 OR
 B ...it gives them a chance to get rewards.

27. A ...they like the excitement of the game.
 OR
 B ...they like doing the skills of the game.

28. A ...it gives them a chance to be with friends.
 OR
 B ...they like to improve their ability at the game.

Please indicate which one of the statements presented in the comparisons below is most true for you by circling the letter to the left of the preferred statement.

PEOPLE ENJOY PLAYING SPORT BECAUSE:

29. A ...they feel good when they have played well.
 OR
 B ...they like to test their ability against other
 players.

30. A ...their playing pleases others important to them.
 OR
 B ...they like to be a member of a team or club.

31. A ...it gives them a chance to get rewards.
 OR
 B ...they like to win.

32. A ...they like doing the skills of the game.
 OR
 B ...it gives them a chance to be with friends.

33. A ...they like to test their ability against other
 players.
 OR
 B ...they like to improve their ability at the game.

34. A ...they like to be a member of a team or club.
 OR
 B ...they feel good when they have played well.

35. A sport because they like to win.
 OR
 B ...their playing pleases others important to them.

36. A ...they like the excitement of the game.
 OR
 B ...it gives them a chance to get rewards.

37. A ...it gives them a chance to be with friends.
 OR
 B ...they like to test their ability against other
 players.

Please indicate which one of the statements presented in the comparisons below is most true for you by circling the letter to the left of the preferred statement.

 PEOPLE ENJOY PLAYING SPORT BECAUSE:

38. A ...they like to improve their ability at the game.
 OR
 B ...they like to be a member of a team or club.

- 39. A ...they feel good when they have played well.
 OR
 B ...they like to win.

- 40. A ...their playing pleases others important to them.
 OR
 B ...they like the excitement of the game.

- 41. A ...it gives them a chance to get rewards.
 OR
 B ...they like doing the skills of the game.

- 42. A ...they like to test their ability against other
 players.
 OR
 B ...they like to be a member of a team or club.

- 43. A ...they like to improve their ability at the game.
 OR
 B ...they like to win.

- 44. A ...they feel good when they have played well.
 OR
 B ...they like the excitement of the game.

- 45. A ...their playing pleases others important to them.
 OR
 B ...they like doing the skills of the game.

SPORT QUESTIONNAIRE

(Administered to the students of Schools B, C, and D)

The term "organized sport" used in this questionnaire is defined as an individual or team sport that is organized by the school's athletic department or by a sport or service club in your community. Games or competitions are scheduled and played against teams or individuals representing other schools or other community sport or service clubs. The teams or individuals are coached by one or more adults. Games or competitions are regulated by an accepted and shared set of rules which are interpreted and applied by one or more independent officials who are in attendance at the event.

Questionnaire 2A

1. Do you play organized sports? (Circle correct response.)

YES

NO

IF YOU ANSWERED "YES" TO QUESTION 1, please answer question 2 below and question 3 on the next page, skip questions 4 and 5 then go on to QUESTIONNAIRES 2B, 2C, 2D and 2E which are attached.

IF YOU ANSWERED "NO" TO QUESTION 1, please answer questions 3, 4 and, if appropriate, question 5 on page two.

2. Please provide the following information (see example below):

- a) the name the sport or sports you play;
- b) how long you have been playing (years);
- c) whether you play for your school, for a team or club in your community (i.e., not a school activity) or for both;
- d) the number of hours per week you play and practice each sport; and
- e) the season(s) of the year you play the sport(s).

EXAMPLE:

<u>Sport(s)</u>	<u>Years</u>	<u>School/Community</u>	<u>Hours/Week</u>	<u>Season</u>
Hockey	3	school	4	Fall/Winter
Ringette	4	community	3	Winter
Track/Field	1	school and community	7	Spring/ Summer
Swimming	2	community	5	All Year

<u>Sport(s)</u>	<u>Years</u>	<u>School/Community</u>	<u>Hours/Week</u>	<u>Season</u>
A. _____	_____	_____	_____	_____
B. _____	_____	_____	_____	_____
C. _____	_____	_____	_____	_____
D. _____	_____	_____	_____	_____
E. _____	_____	_____	_____	_____

3. Please write down how you like to spend your "free" time or "spare" time? (For example, certain recreational activities or hobbies you like to do; clubs you belong to; watching TV or videos; listening to music; hanging out with friends at the mall; etc.).

-
4. Have you recently stopped playing organized sports?
(Circle correct response.)

YES

NO

IF YOU ANSWERED "YES" TO QUESTION 4, please answer question 5 and then go on to QUESTIONNAIRES 2D and 2E which are attached (skip QUESTIONNAIRES 2B and 2C).

IF YOU ANSWERED "NO" TO QUESTION 4, please go on to QUESTIONNAIRES 2D and 2E which are attached (skip QUESTIONNAIRES 2B and 2C).

5. Please give your reason(s) for having stopped playing organized sports.

QUESTIONNAIRE 2B

We are interested in finding out about your motivation for playing sport(s).

On the next 3 pages are some statements about things that have been shown to be related to a person's motivation for participating in organized sport. Please circle YES or NO underneath each statement depending upon which best represents your feeling about the statement. PLEASE SEE FURTHER INSTRUCTIONS BELOW.

If your reaction to the statement is:

a) YES, that's the way I feel.....circle "YES"

OR

b) SOMETIMES I feel that way.....circle "YES"

BUT

If your reaction to the statement is:

c) NO, that is not the way I feel.....circle "NO"

OR

d) If the statement is not applicable to
your sport.....circle "NO"

PLEASE RESPOND TO EVERY STATEMENT BY CIRCLING

ONE OF THE TWO RESPONSES

During the last months while participating (training, practising or competing) did you ever feel...

1. ... listless (no energy) and tired?

Yes

No

2. ... determined to come in first or be the best?

Yes

No

3. ... excited/thrilled?

Yes

No

4. ... like helping someone else to improve?

Yes

No

5. ... full of energy?

Yes

No

6. ... moody for no real reason?

Yes

No

7. ... like winning is very important to you?

Yes

No

8. ... like part of, or very friendly towards, the group
(partner, team or club)?

Yes

No

During the last months while participating (training, practising or competing) did you ever feel...

9. ... impulsive?

Yes

No

10. ... irritated that someone did better than you?

Yes

No

11. ... happier than you have ever been?

Yes

No

12. ... guilty for not doing better?

Yes

No

13. ... powerful?

Yes

No

14. ... very nervous?

Yes

No

15. ... pleased because someone else did well?

Yes

No

16. ... that you were performing your best yet?

Yes

No

17. ... very unhappy or like crying?

Yes

No

During the last months while participating (training, practising or competing) did you ever feel...

18. ... like telling someone off?

Yes

No

19. ... more interested in your sport than in anything else?

Yes

No

20. ... annoyed because you didn't win?

Yes

No

21. ... like doing something to help the team or group?

Yes

No

22. ... that if anyone got in your way, you could let them have it (push them, hit them)?

Yes

No

23. ... you had accomplished something (a skill) quite new to you?

Yes

No

24. ... like others were getting more than they deserved (more than their fair share of attention and reward)?

Yes

No

25. ... like congratulating someone because they had done well?

Yes

No

QUESTIONNAIRE 2C

We are interested in finding out about the satisfaction you get from playing sport(s).

On the next page are some statements about things that have been shown to be related to getting satisfaction from participation in organized sport. Please circle the letter(s) underneath each statement which best represents the satisfaction level you feel you get from the thing or situation described in the statement.

EXTREMELY DISSATISFIED.....circle "ED"
DISSATISFIED.....circle "D"
NEUTRAL.....circle "N"
SATISFIED.....circle "S"
EXTREMELY SATISFIED.....circle "ES"

PLEASE RESPOND TO EVERY STATEMENT BY CIRCLING

ONE OF THE FIVE RESPONSES

<u>EXTREMELY</u> <u>DISSATISFIED</u>	<u>DISSATISFIED</u>	<u>NEUTRAL</u>	<u>SATISFIED</u>	<u>EXTREMELY</u> <u>SATISFIED</u>
---	---------------------	----------------	------------------	--------------------------------------

While participating (i.e., training, practising or competing) in my sport I am satisfied with...

1. ... the way I am performing.

ED	D	N	S	ES
----	---	---	---	----

2. ... my personal growth and development.

ED	D	N	S	ES
----	---	---	---	----

3. ... my fitness level.

ED	D	N	S	ES
----	---	---	---	----

4. ... how my coach treats me.

ED	D	N	S	ES
----	---	---	---	----

5. ... my coach's ability to teach me.

ED	D	N	S	ES
----	---	---	---	----

6. ... the guidance provided by my coach.

ED	D	N	S	ES
----	---	---	---	----

7. ... the respect and fair treatment I get from my coach.

ED	D	N	S	ES
----	---	---	---	----

<u>EXTREMELY</u>				<u>EXTREMELY</u>
<u>DISSATISFIED</u>	<u>DISSATISFIED</u>	<u>NEUTRAL</u>	<u>SATISFIED</u>	<u>SATISFIED</u>

While participating (i.e., training, practising or competing) in my sport I am satisfied with...

8. ... how my coach deals with problems.

ED	D	N	S	ES
----	---	---	---	----

9. ... the support I get from my coach.

ED	D	N	S	ES
----	---	---	---	----

10. ... the leadership of my coach.

ED	D	N	S	ES
----	---	---	---	----

QUESTIONNAIRE 2D

Whether or not you participate in organized sport, we are interested in knowing your feelings about the enjoyment people get from being involved in sport.

People play organized sport(s) for different reasons. On the next 2 pages are some statements about the reasons why some people enjoy playing sports. Please circle the letter(s) underneath each statement which best represents your feelings about the statement.

If you STRONGLY AGREE.....circle "SA"

If you AGREE.....circle "A"

If you are not sure or are undecided.....circle "U"

If you DISAGREE.....circle "D"

If you STRONGLY DISAGREE.....circle "SD"

PLEASE RESPOND TO EVERY STATEMENT BY CIRCLING

ONE OF THE FIVE RESPONSES

EXAMPLE

1. People enjoy playing sport because they like to have fun.

SA A U D SD

(If you don't play a sport, circle the response which best represents your feeling about this particular reason).

(If you play a sport, circle the response which best represents your feeling about this particular reason by relating it to the enjoyment you actually get from playing sport).

Now please respond to the questionnaire below.

STRONGLY				STRONGLY
<u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	<u>DISAGREE</u>

People enjoy playing sport because...

1. ... they like to test their ability against other players.

SA A U D SD

2. ... they like the excitement of the game.

SA A U D SD

3. ... they like to win.

SA A U D SD

4. ... they like to be a member of a team or club.

SA A U D SD

STRONGLY
AGREE

AGREE

UNDECIDED

DISAGREE

STRONGLY
DISAGREE

People enjoy playing sport because...

5. ... they feel good when they have played well.

SA A U D SD

6. ... it gives them a chance to get rewards.

SA A U D SD

7. ... they like to improve their ability at the game.

SA A U D SD

8. ... it gives them a chance to be with friends.

SA A U D SD

9. ... they like doing the skills of the game.

SA A U D SD

10. ... their playing pleases others who are important to
 them.

SA A U D SD

QUESTIONNAIRE 2E

1. Physical Fitness Record Over The Past Year

We would like to get some idea of your present physical activity level as well as what it has been for each month over the past year. Please mark a small "x" on the chart below at the appropriate activity level for each of the past 12 months and for today (1 = last month, 12 = 12 months ago, etc.). Note that "Very High" means a very high level of physical activity such as training for a long-distance marathon run; "None" would mean that you did not get any exercise at all, for example, that you were hospitalized or confined to bed for the period of time in question.

Activity Level

Very High:	_	_	_	_	_	_	_	_	_	_	_	_
High:	_	_	_	_	_	_	_	_	_	_	_	_
Moderate:	_	_	_	_	_	_	_	_	_	_	_	_
Low:	_	_	_	_	_	_	_	_	_	_	_	_
None:	_	_	_	_	_	_	_	_	_	_	_	_

12	11	10	9	8	7	6	5	4	3	2	1	Now

Months Ago

3. Importance of Physical Activity

(Not Used in Data Analysis)

Here is a list of reasons why some people do physical activities. How important is each of these to you? (Check one of the 4 spaces beside each reason.)

	<u>Very</u> <u>Important</u>	<u>Some</u> <u>Importance</u>	<u>Little</u> <u>Importance</u>	<u>No</u> <u>Importance</u>
To feel good.	_____	_____	_____	_____
To be with other people.	_____	_____	_____	_____
To have fun or excitement.	_____	_____	_____	_____
To look better.	_____	_____	_____	_____
To control weight.	_____	_____	_____	_____
To be physically fit (to keep in shape).	_____	_____	_____	_____

Delinquent Behaviour Scale

(All Schools)

This questionnaire deals with some material which you might consider highly sensitive and personal. We agree. However, for this research project to be meaningful, it is important that the researchers get an accurate picture of how much people may be involved in certain activities.

Your answers to this questionnaire, like your answers to the other questionnaires, will not be made available to anyone other than the researchers involved in this study.
YOUR ANSWERS ARE COMPLETELY CONFIDENTIAL. NO NAMES OR IDENTIFIERS APPEAR ANYWHERE ON THE QUESTIONNAIRES.

The statements on the next few pages describe some activities in which you may have participated. Please circle the letter underneath each statement which represents your level of participation in the activity described.

If you have NEVER engaged in the activity.....circle "A"

If you have engaged in the activity at least once in your life BUT NOT IN THE LAST YEAR.....circle "B"

If you have engaged in the activity only ONCE IN THE LAST YEARcircle "C"

If you have engaged in the activity TWICE IN THE LAST YEAR.....circle "D"

If you have engaged in the activity THREE OR MORE TIMES IN THE LAST YEAR.....circle "E"

PLEASE RESPOND TO EVERY STATEMENT

A = NEVER
B = NOT IN THE LAST YEAR
C = ONCE IN THE LAST YEAR
D = TWICE IN THE LAST YEAR
E = THREE OR MORE TIMES IN THE
LAST YEAR

1. Bribed, or attempted to bribe, a police officer or any other type of official.

A B C D E

2. Used force to get money or valuables from another person.

A B C D E

3. Bought beer, wine or liquor when I was not of legal age to drink.

A B C D E

4. Sold illegal drugs other than marijuana or hashish.

A B C D E

5. Carried a razor, switchblade or gun (besides ordinary pocketknife).

A B C D E

6. Attacked someone with the idea of seriously injuring them.

A B C D E

7. Taken part in a gang fight.

A B C D E

8. Taken things of large value (worth more than \$200.00) that did not belong to me (other than an automobile).

A B C D E

A = NEVER
B = NOT IN THE LAST YEAR
C = ONCE IN THE LAST YEAR
D = TWICE IN THE LAST YEAR
E = THREE OR MORE TIMES IN THE LAST YEAR

9. Broken into and entered a home, store or building.

A B C D E

10. Had marijuana or hashish in my possession.

A B C D E

11. Taken a car for a ride without the owner's knowledge.

A B C D E

12. Attempted to force or did force someone to have sex with me.

A B C D E

13. Started a fist-fight during an argument or struck or "beat up" someone who had not hit me first or who had not threatened to hit me.

A B C D E

14. Purposefully damaged property not belonging to me.

A B C D E

15. Driven a car without a driver's license or learner's permit.

A B C D E

A = NEVER
B = NOT IN THE LAST YEAR
C = ONCE IN THE LAST YEAR
D = TWICE IN THE LAST YEAR
E = THREE OR MORE TIMES IN THE LAST YEAR

16. Gave false information while filling out an application or report, or falsified an official document (e.g., birth certificate, proof of age, age of majority card, etc.).

A B C D E

17. Sold marijuana or hashish.

A B C D E

18. Started a fire or helped set fire to a building.

A B C D E

19. Participated in illegal gambling.

A B C D E

20. Taken things of medium value (worth between \$5 and \$200) that did not belong to me (e.g., T shirt, library book, etc.).

A B C D E

21. Made false taxi or ambulance calls, fire alarms, food orders, etc.

A B C D E

22. Driven a car in a very fast, reckless manner.

A B C D E

A = NEVER
B = NOT IN THE LAST YEAR
C = ONCE IN THE LAST YEAR
D = TWICE IN THE LAST YEAR
E = THREE OR MORE TIMES IN THE
LAST YEAR

23. Went onto someone's property when I knew that I was not supposed to do so.

A B C D E

24. Threatened to hurt or injure someone.

A B C D E

25. Taken little things (worth less than \$5) that did not belong to me (e.g., shoplifting candy).

A B C D E

26. Had in my possession things that I knew were stolen.

A B C D E

27. Have cheated on exams and/or assignments.

A B C D E

28. Driven a car while impaired by alcohol or drugs or when I knew that I had consumed more alcohol than was allowed by law to drive.

A B C D E

29. Caused a disturbance in a public place by shouting, screaming, fighting, swearing or using obscene or insulting language.

A B C D E

A = NEVER
B = NOT IN THE LAST YEAR
C = ONCE IN THE LAST YEAR
D = TWICE IN THE LAST YEAR
E = THREE OR MORE TIMES IN THE
LAST YEAR

30. Had illegal drugs other than marijuana or hashish in my possession.

A B C D E

31. Sold beer, wine or liquor to someone under the legal age to drink (a minor under the age of 19).

A B C D E

32. Have stolen a car for purposes other than joyriding.

A B C D E

33. Got money or something else from others by lying, deception or false pretence.

A B C D E

Delinquent Sentiments Scale

(All Schools)

This is not a test. There are no "right" or "wrong" answers.

On the next few pages are statements with which you may agree or disagree. Please circle the letter(s) underneath each statement which best represents your feelings about it. Circle the response which best represents your general feeling or the way you usually feel.

If you STRONGLY AGREE.....circle "SA"

If you AGREE.....circle "A"

If you are not sure or are undecided.....circle "U"

If you DISAGREE.....circle "D"

If you STRONGLY DISAGREE.....circle "SD"

PLEASE RESPOND TO EVERY STATEMENT BY CIRCLING

ONE OF THE FIVE RESPONSES

PLEASE RESPOND TO EVERY STATEMENT BY CIRCLING

ONE OF THE FIVE RESPONSES

<u>STRONGLY</u> <u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	<u>STRONGLY</u> <u>DISAGREE</u>
---------------------------------	--------------	------------------	-----------------	------------------------------------

1. Pretty well all laws deserve our respect.

SA	A	U	D	SD
----	---	---	---	----

2. It is our duty to obey all laws.

SA	A	U	D	SD
----	---	---	---	----

3. Laws are usually bad.

SA	A	U	D	SD
----	---	---	---	----

4. The law is rotten to the core.

SA	A	U	D	SD
----	---	---	---	----

5. You cannot respect the law because its there only to help a small and selfish group of people.

SA	A	U	D	SD
----	---	---	---	----

6. All laws should be obeyed just because they are laws.

SA	A	U	D	SD
----	---	---	---	----

7. The law does not help the average person.

SA	A	U	D	SD
----	---	---	---	----

8. The law is good.

SA	A	U	D	SD
----	---	---	---	----

STRONGLY <u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	STRONGLY <u>DISAGREE</u>
--------------------------	--------------	------------------	-----------------	-----------------------------

9. Law and justice are the same thing.

SA	A	U	D	SD
----	---	---	---	----

10. The law makes slaves out of most people for the benefit of a few people at the top.

SA	A	U	D	SD
----	---	---	---	----

11. Almost any jury can be fixed.

SA	A	U	D	SD
----	---	---	---	----

12. You cannot get justice in court.

SA	A	U	D	SD
----	---	---	---	----

13. Lawyers are honest.

SA	A	U	D	SD
----	---	---	---	----

14. The prosecution often produces fake witnesses.

SA	A	U	D	SD
----	---	---	---	----

15. Judges are honest and kind.

SA	A	U	D	SD
----	---	---	---	----

16. Court decisions are pretty well always fair.

SA	A	U	D	SD
----	---	---	---	----

<u>STRONGLY</u> <u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	<u>STRONGLY</u> <u>DISAGREE</u>
---------------------------------	--------------	------------------	-----------------	------------------------------------

17. Pretty well anything can be fixed in the court if you have enough money.

SA	A	U	D	SD
----	---	---	---	----

18. A judge is a good person.

SA	A	U	D	SD
----	---	---	---	----

19. The police are honest.

SA	A	U	D	SD
----	---	---	---	----

20. A cop is a friend to people in need.

SA	A	U	D	SD
----	---	---	---	----

21. Life would be better with fewer police.

SA	A	U	D	SD
----	---	---	---	----

22. The police should be paid more for their work.

SA	A	U	D	SD
----	---	---	---	----

23. The police are as crooked as the people they arrest.

SA	A	U	D	SD
----	---	---	---	----

24. Society would be better off if there were more police.

SA	A	U	D	SD
----	---	---	---	----

25. The police almost never help people.

SA	A	U	D	SD
----	---	---	---	----

<u>STRONGLY</u> <u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	<u>STRONGLY</u> <u>DISAGREE</u>
---------------------------------	--------------	------------------	-----------------	------------------------------------

26. Sometimes a person like me has to break the law in order to get ahead.

SA	A	U	D	SD
----	---	---	---	----

27. Most successful people broke the law to get ahead in life.

SA	A	U	D	SD
----	---	---	---	----

28. You should always obey the law even if it keeps you from getting ahead in life.

SA	A	U	D	SD
----	---	---	---	----

29. It's OK to break the law as long as you don't get caught.

SA	A	U	D	SD
----	---	---	---	----

30. Most people would commit crimes if they knew they wouldn't get caught.

SA	A	U	D	SD
----	---	---	---	----

31. There never is a good reason to break the law.

SA	A	U	D	SD
----	---	---	---	----

32. A hungry person has the right to steal.

SA	A	U	D	SD
----	---	---	---	----

33. It's OK to get around the law as long as you don't actually break it.

SA	A	U	D	SD
----	---	---	---	----

STRONGLY				STRONGLY
<u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	<u>DISAGREE</u>

34. You should only obey those laws which are reasonable.

SA A U D SD

35. You are crazy to work for a living if there is an easier way, even if it means breaking the law.

SA A U D SD

36. People who have broken the law have the same sort of ideas about life as me.

SA A U D SD

37. I prefer to be with people who obey the law rather than with people who break the law.

SA A U D SD

38. I am more like the professional criminal than the people who only break the law occasionally.

SA A U D SD

39. People who have been in trouble with the law are more like me than people who don't have trouble with the law.

SA A U D SD

40. I have very little in common with people who never break the law.

SA A U D SD

STRONGLY
AGREE

AGREE

UNDECIDED

DISAGREE

STRONGLY
DISAGREE

41. No one who breaks the law can be my friend.

SA

A

U

D

SD

Delinquent Personality Scale

(All Schools)

On the next few pages are some statements with which you may agree or disagree. Please indicate whether you consider the statement to be "true" (T) or "false" (F) according to the way you feel about it. If you agree with the statement, circle "T". If you disagree with it, circle "F". Remember, there are no "right" or "wrong" answers. If you are not sure about a particular statement, circle the letter which comes closest to your general feeling or to the way you usually feel.

PLEASE RESPOND TO EVERY STATEMENT

For each statement, circle the appropriate letter ("T" or "F") according to how you feel about the statement.

	TRUE	FALSE

1. I skip school quite a bit.	T	F
2. If someone dares me to do something, I usually do it.	T	F
3. The way things look, it's pretty hard to keep up the hope that I will amount to something.	T	F
4. I feel more strongly about right and wrong than most people do.	T	F
5. Most things don't excite me or thrill me.	T	F
6. My parents often don't like my friends.	T	F
7. I often do things on the spur of the moment without thinking first.	T	F
8. I wouldn't ask for a favour even if it meant going without something.	T	F
9. I have more things to worry about than most people.	T	F
10. Sometimes I have been sent to the principal's office for fooling around.	T	F
11. I try to stay out of trouble at all costs.	T	F
12. I usually feel pretty happy.	T	F
13. Many times I feel as though I have done something wrong or wicked.	T	F
14. I have often done things against my parent's wishes.	T	F
15. I have never had too much alcohol.	T	F
16. I often feel like leaving home.	T	F

For each statement, circle the appropriate letter ("T" or "F") according to how you feel about the statement.

	TRUE	FALSE

17. If I see trouble, I go out of my way to meet it rather than try to avoid it.	T	F
18. I seem to have more regrets than other people about the things I do.	T	F
19. I often have the urge to run away from home.	T	F
20. So far, I have got a pretty raw deal out of life.	T	F
21. Sometimes I have drunk far too much alcohol.	T	F
22. I think most people are happier than I am.	T	F
23. When I was younger, I occasionally stole things.	T	F
24. I often find people talking about me behind my back.	T	F
25. I often give teachers a lot of trouble.	T	F
26. Going to school doesn't interest me much.	T	F
27. The only way to get along these days is not to trust anyone.	T	F
28. The only way to make really big money is to steal it.	T	F
29. I have very strong likes and dislikes.	T	F
30. I get into a lot of fights at school.	T	F
31. When something goes wrong, I usually blame myself rather than someone else.	T	F
32. Most people get into trouble through no fault of their own.	T	F

For each statement, circle the appropriate letter ("T" or "F") according to how you feel about the statement.

	TRUE	FALSE
-----	-----	-----
33. I do what I want to do, whether anybody likes it or not.	T	F
34. I sometimes feel that I made the wrong choice in choosing the courses I am taking in high school.	T	F
35. I don't mind lying if I am in bad trouble.	T	F
36. I get nervous when I have to ask someone for something like, for example, a job.	T	F
37. It is hard for me to act natural when I am with people I have not met before.	T	F
38. I have never been in trouble with the law.	T	F
39. I enjoy work as much as play.	T	F
40. I often feel that I will never get anywhere in life.	T	F
41. I sometimes feel like quitting school.	T	F
42. When I was a little kid, I was always doing things my parents told not to.	T	F
43. I have failed at least one year in school.	T	F
44. The only way to settle anything is by fighting and winning.	T	F
45. I think that it would be fun to be in jail.	T	F
46. My parents move from place to place a lot.	T	F
47. My parents have sometimes been in trouble with the law.	T	F
48. I would rather be at home when things go wrong.	T	F

For each statement, circle the appropriate letter ("T" or "F") according to how you feel about the statement.

	TRUE	FALSE

49. I am really too tough a person to get along with most friends.	T	F
50. I would be more successful in school and in life if people would give me a fair chance.	T	F
51. I have run away from home.	T	F
52. Police and judges will tell you one thing but do another.	T	F
53. Winning a fight is more fun than anything else.	T	F
54. If you don't have enough money to live on, it's OK to steal.	T	F
55. Sometimes I feel that if I could just get away from home, everything would be alright.	T	F
56. If somebody does something to me, I always make sure to get them back.	T	F
57. A person like me hits first and asks questions later.	T	F
58. The people that run things are usually against me.	T	F
59. My parents usually blame the type of people I hang out with for the trouble I get into.	T	F
60. The police usually treat you unfairly.	T	F
61. If the police don't like you, they will get you for anything they can.	T	F
62. Most brothers and sisters are more trouble than they are worth.	T	F
63. It's dumb to trust older people.	T	F

Social Support For Delinquency Scale

(All Schools)

This questionnaire asks several questions about how much crime and delinquency you see going on around you. Some of the material you might consider highly sensitive and personal. We agree. It is important, however, that the researchers get an accurate picture of what is going on around you.

Please answer each question as honestly and as carefully as possible. Remember that your responses are confidential. Your answers not be made available to anyone other than the researchers involved in this study. YOUR ANSWERS ARE COMPLETELY CONFIDENTIAL. NO NAMES OR IDENTIFIERS APPEAR ANYWHERE ON THE QUESTIONNAIRES.

PLEASE RESPOND TO EVERY STATEMENT

INSTRUCTIONS: Please circle that word which best describes your position in the last six months (the words appear at the bottom of each question).

1. Think of the people you know and have been associating with over the past year.

a. Are any of them involved in activities such as stealing (cars, money, property), fraud, etc.?

Most Several Few None

b. Are any of them the type of person who enjoys fighting and/or destroying things or who get into fights whether they enjoy it or not.

Most Several Few None

2. Think of your best friends, that is, those close friends whom you have seen most frequently over the past year.

a. Are any of them involved in activities such as stealing (cars, money, property), fraud, etc.?

Most Several Few None

b. Are any of them the type of person who enjoys fighting and/or destroying things or who get into fights whether they enjoy it or not.

Most Several Few None

INSTRUCTIONS: Please circle the letter(s) which represent the words below and which best describe your position in the last six months (the letters appear at the bottom of each question).

	Definitely Yes	Yes	Not Sure	No
	DY	Y	NS	N

3. If I want to purchase some goods at a reduced price (reduced because they have been stolen), I would know where to go or who to see to get them.	DY	Y	NS	N
4. If I want to get some money for some stolen goods, I would know where to go or who to see to get it.	DY	Y	NS	N
5. If I was planning to commit a crime, I know some people who could and would help me plan it.	DY	Y	NS	N
6. While I might not call them friends and while I might not see them very often, I know some people who are involved in delinquent/criminal activity.	DY	Y	NS	N
7. I know of at least one person in my neighbourhood or area of town who appears to be doing "just fine" as a result of his/her delinquent/criminal activity.	DY	Y	NS	N
8. In my neighbourhood or area of town, there are people who are involved in delinquent/criminal activity and who are liked and respected by others in the neighbourhood.	DY	Y	NS	N

Value of Education Scale

(All Schools)

On the next few pages are statements with which you may agree or disagree. Please circle the letter(s) underneath each statement which best represents your feeling about the statement. Circle the response which best represents your general feeling or the way you usually feel.

If you STRONGLY AGREE.....circle "SA"

If you AGREE.....circle "A"

If you are not sure or are undecided.....circle "U"

If you DISAGREE.....circle "D"

If you STRONGLY DISAGREE.....circle "SD"

PLEASE RESPOND TO EVERY STATEMENT BY CIRCLING

ONE OF THE FIVE RESPONSES

For each statement, circle the appropriate letter beneath it according to how you feel about the statement.

	STRONGLY <u>AGREE</u>	<u>AGREE</u>	<u>UNDECIDED</u>	<u>DISAGREE</u>	STRONGLY <u>DISAGREE</u>
1. Information learned in school is important for any kind of work one may wish to do later.	SA	A	U	D	SD
2. I go to school only because I have to.	SA	A	U	D	SD
3. Education is very important in a person's life.	SA	A	U	D	SD
4. Education turns people into snobs.	SA	A	U	D	SD
5. I think the education I receive in school will be of use to me after I leave school.	SA	A	U	D	SD
6. I see no value in education.	SA	A	U	D	SD
7. Education helps us to make the best use of our lives.	SA	A	U	D	SD
8. Education is an excellent way to build character.	SA	A	U	D	SD

For each statement, circle the appropriate letter beneath it according to how you feel about the statement.

STRONGLY
AGREE AGREE UNDECIDED DISAGREE STRONGLY
DISAGREE

9. A person can learn much more by going out to work than by going to school.

SA A U D SD

10. The more educated a person is, the better he/she is able to enjoy life.

SA A U D SD

11. Education is no help in getting a job today.

SA A U D SD

12. Getting an education is worth all the time and effort it takes.

SA A U D SD

13. Training received in school is of little help in dealing with real problems in real life.

SA A U D SD

14. People are foolish to keep going to school if they can get a job instead.

SA A U D SD

15. Education makes a person a better citizen.

SA A U D SD

For each statement, circle the appropriate letter beneath it according to how you feel about the statement.

STRONGLY
AGREE AGREE UNDECIDED DISAGREE STRONGLY
DISAGREE

16. Getting a high school diploma is the only way to get ahead.

SA A U D SD

17. Real education comes from your own experience, not from the things you learn in school.

SA A U D SD

18. School is a waste of time.

SA A U D SD

Social Desirability Scale
(All Schools)

ON THE FOLLOWING PAGES ARE PAIRS OF STATEMENTS

READ EACH PAIR OF STATEMENTS CAREFULLY

SELECT THE STATEMENT WHICH YOU THINK IS MORE TRUE FOR YOU

INDICATE YOUR CHOICE BY CIRCLING THE LETTER TO THE LEFT
OF THE SELECTED STATEMENT

Indicate which of the statements in each pair is more true for you by circling the letter to the left of the statement chosen.

1. A I sometimes play arcade games.
 OR

 B I never play arcade games.

2. A I always hang out all by myself.
 OR

 B I sometimes hang out with other people.

3. A I sometimes argue with my parents/guardians.
 OR

 B I never argue with my parents/guardians.

4. A I am always polite to adults.
 OR

 B I am sometimes not polite to adults.

5. A I never swear when I feel angry.
 OR

 B I sometimes swear when I feel angry.

Indicate which of the statements in each pair is more true for you by circling the letter to the left of the statement chosen.

-
6. A I sometimes lie.
- OR
- B I never lie.
-
7. A I sometimes hit other people.
- OR
- B I never hit other people.
-
8. A I always try to help people.
- OR
- B I sometimes do not try to help people.
-
9. A I never "show off" to my friends.
- OR
- B I sometimes "show off" to my friends.
-
10. A I sometimes say mean things to people.
- OR
- B I never say mean things to people.
-

Indicate which of the statements in each pair is more true for you by circling the letter to the left of the statement chosen.

11. A I sometimes feel like throwing or breaking things.
 OR

 B I never feel like throwing or breaking things.

12. A I always feel that my parents/guardians are right.
 OR

 B I sometimes feel that my parents/guardians are
 not always right.

13. A I never act improperly.
 OR

 B I sometimes act improperly.

14. A I sometimes do other things instead of what the
 teacher tells me to do.
 OR

 B I always do what the teacher tells me to do.

15. A I sometimes do things I am not supposed to do.
 OR

 B I never do things I am not supposed to do.

Indicate which of the statements in each pair is more true for you by circling the letter to the left of the statement chosen.

A I think my teachers know more than I do.

16. OR

B I think I know more than the teacher does.

A I sometimes want things my parents/guardians don't want me to have.

17. OR

B I never want things my parents/guardians don't want me to have.

A It sometimes bothers me when I don't get my way.

18. OR

B It never bothers me when I don't get my way.

A I always listen to my parents/guardians.

19. OR

B I sometimes do not listen to my parents/guardians.

A I always wash my hands before every meal.

20. OR

B I sometimes do not wash my hands before every meal.

Indicate which of the statements in each pair is more true for you by circling the letter to the left of the statement chosen.

21. A I never feel like making fun of other people.
- OR
- B I sometimes feel like making fun of other people.

22. A I sometimes forget to be polite, for example,
 saying "please" and "thank you".
- OR
- B I never forget to be polite.

23. A It bothers me sometimes to share things with my
 friends.
- OR
- B It never bother me to share things with my
 friends.

24. A I sometimes want to do things my parents/guardians
 tell me not to do.
- OR
- B I never want to do things my parents/guardians
 tell me not to do.

Indicate which of the statements in each pair is more true for you by circling the letter to the left of the statement chosen.

25. A I never get angry.
 OR
 B I sometimes get angry.

26. A I am always nice to people.
 OR
 B I am sometimes not nice to people.

27. A I sometimes do not do the right thing.
 OR
 B I always do the right thing.

28. A I always tell the truth.
 OR
 B I sometimes do not tell the truth.

Debriefing

The purpose of this research was to examine the relationship between athletic participation, certain kinds of behaviour and a person's motivation for participating in sports programs. Earlier research conducted in the United States into the sociology and psychology of sport has indicated that amongst youth:

- 1) athletic participation may reduce delinquent behaviour;
- 2) when the appropriate social conditions and personal attitudes, values and beliefs coincide, activities such as athletic participation may be particularly effective in preventing and/or inhibiting delinquent behaviour;
- and 3) participation in athletic or sport activities on the part of individuals who also commit delinquent acts may contribute to the lessening of the seriousness of those acts.

The present study is attempting to determine the appropriateness of these conclusions in a Canadian context. Additionally, it attempts to extend the understanding of these relationships by examining the role motivation for participation (and non-participation) plays in them.

We would like to thank you for participating in this research project. Your time and effort have been greatly appreciated.

If you have any questions or comments about this research, please feel free to contact:

R. E. Watkins
Principal Researcher
Telephone: xxx-xxxx, extension xxxx;

or

Dr. D. A. Andrews,
Faculty Sponsor of the research project
Telephone: (613) xxx-xxxx, extension xxxx.

If you have any ethical concerns about this research please contact:

Dr. L. Paquet
Chair, Department of Psychology Ethics Committee
Telephone: (613) xxx-xxxx, extension xxxx;

or

Dr. W. Jones
Chair, Department of Psychology
Telephone: (613) xxx-xxxx, extension xxxx.

If the sensitive nature of some of the questionnaires has troubled you and you would like to talk to someone about it or to seek some form of counselling, the following organizations could be of help:

Someone to talk with at [your school]
 Contact: Student Services Counsellor or
 Special Education Services or
 Youth Care Worker
 Telephone: xxx-xxx

Or for specific problems:

Problem: Personal/ Family Crisis
 Contact: Youth Crisis Service (YCS)
 Telephone: xxx-xxxx

Problem: Sexual Assault
 Contact: Sexual Assault Crisis Centre
 Telephone: xxx-xxxx

Problem: Sexual Health
 Contact: Birth Control Centre
 Telephone: xxx-xxxx

Problem: Drug and Alcohol Problems
 Contact: Alcohol Referral Centre
 Telephone: xxx-xxxx

Contact: K.A.I.R.O.S.
 Telephone: xxx-xxxx

Contact: Detox Centre
 Telephone: xxx-xxxx

Problem: Homeless/Runaways
 Contact: Ryandale House
 Telephone: xxx-xxxx

Contact: Dawn House Women's Shelter
 Telephone: xxx-xxxx

Problem: Child Abuse
 Contact: Children's Aid Society
 Telephone: xxx-xxxx
 xxx-xxxx (Emergency)

APPENDIX B

Table B-1: Measures of Internal Consistency and Stability

Table B-1

Measures of Internal Consistency and Stability

<u>Questionnaire</u>	<u>Number of Items</u>	<u>Internal Consistency</u>	<u>Stability</u>
Delinquent Sentiments"	41		
- Law, Courts, Police	25	.67 ^b	.62 ^c
- Tolerance for Law Violations	10	.72 ^b	.41
- Identification with Delinquent Others	6	.53 ^b	.17
Delinquent Personality"	63 ^d		
- Psychopathy	25	.62	.65
- Neuroticism	27	.66	.71
- Inadequacy-Immaturity	9	.40	.62
- Scholastic Maladjustment	12	.50	.67
Conventional Values"			
- Value of Education	18	.68	.64
Social Support for Delinquency"	10		
- Affective Ties to Delinquents	4	.80	.11
- Delinquent Resources/Models	6	.81	.53
Motivation for Participation in Organized Sports"	25		
- Aggression	5	.51/.43 ^f	.71
- Conflict	5	.60/.57 ^f	.80
- Competence	5	.56/.59 ^f	.50
- Competition	5	.72/.75 ^f	.67
- Cooperation	5	.68/.66 ^f	.55

Table B-1 (continued)

Questionnaire	Number of Items	Internal Consistency	Stability
Satisfaction from Participation in Organized Sports ^a	10		
- Coach's Leadership	7	.95	n/a
- Personal Outcome	3	.86	n/a
Enjoyment from Participation in Organized Sports ^b	45	n/a	.73/.86
Social Desirability ^c	28	.83/.85 ^d	.58 ^e

^aAdapted from Andrews (1985).

^bCronbach's Alphas. Split-half correlations were: LCP (.90), TLV (.93), IDO (.88).

^cThe test-retest interval for all of the Andrews work was six months.

^dSeveral items in the DP scale are included in more than one of the sub-scales thus the total number of items of the combined sub-scales is greater than the total number of items of the DP scale.

^eAdapted from Butt (1979).

^fThe first figure represents a sample of males, the second figure a sample of females.

^gAdapted from Chelladurai et al., (1988).

^hAdapted from Wankel & Kreisel (1985). The test-retest interval for the first, younger group was one week. The test-retest interval for the second, older group was two days.

ⁱAdapted from Ford & Rubin (1970).

^jThe first figure represents a sample of girls, the second figure a sample of boys.

^kThe test-retest interval was five weeks.
n/a: Not available.

APPENDIX C

Coding Manuals

Scoring Keys

CODING MANUAL (School A ONLY)

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Case ID	Caseid	1 to N
School	School	0 = School A 1 = School B 2 = School C 3 = School D
Age	Age	Age in years
Gender	Sex	0 = Female 1 = Male
Grade	Grade	09 to 13/OAC
Level of Instruction	Level	0 = General (10 to 12 ONLY) 1 = Advanced and blended
Community Size <i>*data not used</i>	Size	0 = Rural 1 = Village 2 = Town 3 = City
Job	Job	0 = No 1 = Yes
Hours per Week Worked	Jobhrs	Number of Hours 88 = N/A
Sport Participation	Sporpart	0 = No 1 = Yes
Name of Sport	Spornam1 to Spornam6	See Annex A 88 = N/A
Number of Years Played	Sporyrs1 to Sporyrs6	Number of Years 88 = N/A

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Sport Sponsor: School or Community	Sporloc1 to Sporloc6	0 = School 1 = Community or Both 8 = N/A
Hours per Week Sport Played and Practised	Sporhrs1 to Sporhrs6	Number of Hours 88 = N/A
Like Playing Organized Sports	Sporlike	0 = No 1 = Yes 8 = N/A
Reasons for Liking Organized Sports	Sporlik1 to Sporlik5	See Annex B 88 = N/A
Reasons for Not Liking Organized Sports	Spornlk1 to Spornlk5	See Annex C 88 = N/A
Leisure Time	Leis1 to Leis5	See Annex D 88 = N/A
Stopped Playing Organized Sports	Sporstop	0 = No 1 = Yes 8 = N/A
Reasons for Stopped Playing Organized Sports	Sporstp1 to Sporstp5	See Annex E 88 = N/A
Delinquent Beh.	DB1 to DB33	Initial coding: 1 = Never (A) 2 = Not In Last Year (B) 3 = Once In Last Year (C) 4 = Twice In Last Year (D) 5 = Three or More Times in Last Year (E)

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Delinquent Beh.	DB 1 to DB33	Final Coding: 0 = Never/Not In Last Year 1 = Once In Last Year 2 = Twice In Last Year 3 = Three or More Times in Last Year
Delinquent Sent.* - Law, Courts, Police	DS1 to DS25	1 = Strongly Agree (SA) 2 = Agree (A) 3 = Undecided (U) 4 = Disagree (D) 5 = Strongly Disagree (SD)
*for sub-scales see Delinquent Sentiments scoring key at end of manual		
Delinquent Sent.* - Tolerance for law violation - Identification with del. others	DS26 to DS41	1 = Strongly Disagree (SD) 2 = Disagree (D) 3 = Undecided (U) 4 = Agree (A) 5 = Strongly Agree (SA)
*for sub-scales see Delinquent Sentiments scoring key at end of manual		
Delinquent Pers.*	DP1 to DP63**	0 = True (T) 1 = False (F)
*see Delinquent Personalty scoring key at end of manual **scoring for some of the items was the reverse of that shown - see scoring key		
Social Support for Delinquency*	SSDEL1A/SSDEL1B and SSDEL2A/SSDEL2B	1 = None 2 = Few 3 = Several 4 = Most

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Social Support for Delinquency (cont'd)	SSDEL3 to SSDEL8	1 = No (N) 2 = Not Sure (NS) 3 = Yes (Y) 4 = Definitely Yes (DY)
*for sub-scales see Social Support for Delinquency scoring key at end of manual		

Value of Education	VALED1 to VALED18*	1 = Strongly Agree (SA) 2 = Agree (A) 3 = Undecided (U) 4 = Disagree (D) 5 = Strongly Disagree (SD)
*scoring for half of the items was the reverse of that shown - see Value of Education scoring key at end of manual		
Motivation for Participation in Sport*	Mot1 to Mot45	0 = A 1 = B
*data not used		
Social Desir.*	SD1 to SD28	0 = A 1 = B
*scoring for half of the items was the reverse of that shown - see Social Desirability scoring key at end of manual		

Annex A

Sport Names

01 = Hockey
 02 = Baseball (Hardball) (Not Softball)
 03 = Football/Touch Football for Girls
 04 = Basketball
 05 = Swimming
 06 = Volleyball
 07 = Ringette
 08 = Figure Skating
 09 = Track & Field
 10 = Horseback Riding/Equestrian
 11 = Cross Country
 12 = Soccer
 13 = Badminton
 14 = Curling
 15 = Wrestling
 16 = Bowling
 17 = Golf
 18 = Rugby
 19 = Gymnastics
 20 = Softball
 21 = Field Hockey
 22 = Weightlifting (#663)
 23 = Broomball (#670)
 24 = Judo/Karate
 25 = Speedskating
 26 = Sailing
 27 = Skiing
 28 = Rowing
 29 = Biking
 30 = Tennis (#779)
 31 = Boxing
 32 = Cycling
 33 = Water Skiing

 88 = Not Applicable

NOTE: The following are not considered sports:

- Dancing
- Motorcross
- Cheerleading

Annex B

Reasons for liking Organized Sport

- 01 = Competition
- 02 = Fitness
- 03 = Socializing (including meeting new people)
- 04 = Learn sportmanship
- 05 = New places (go to or see)/Travel
- 06 = Have fun
- 07 = Be on a team
- 08 = Very athletic/talented (#606)
- 09 = Always something to do (#611)/Get out of house
- 10 = Fair ("It's all fair" - #617)/Everyone knows the rules (#705)
- 11 = Challenging/Improve skills/Physical challenge
- 12 = Learn
- 13 = No arguing about who is on the team
- 14 = Tournaments
- 15 = Because it's well organized/games are scheduled
- 16 = Improve yourself/Build character (#707)
- 17 = Work as a team (Cooperation?)
- 18 = Play more teams (exposure to a diversity of teams) (#625)
- 19 = Builds coordination
- 20 = Self-esteem (#628)
- 21 = Inexpensive (#628)
- 22 = Looks good on job applications (#628)
- 23 = Reduces stress
- 24 = Interesting/Exciting
- 25 = Winning
- 26 = Like hurting people (in hockey) (#637)
- 27 = No one gets hurt (#650)
- 28 = Play aggressively
- 29 = Get the reward (#667)
- 30 = Specific aspect of a sport ("I like to run"- #674 - Baseball, Soccer, Basketball)/("I love ice sports - #670 - Broomball, Hockey)
- 31 = Love being active or being involved
- 32 = Like the coach/administration
- 33 = Enjoy it
- 34 = When you win, you celebrate together (team); when you lose, you support each other (team)/Common bond
- 35 = Rewarding feeling of doing your best (#696) / Achievement (#700)
- 36 = "the rush you get when pushing your body to top physical extremes" (#055)
- 37 = The stories one obtains by participating in organized sports

Annex B (continued)

Reasons for liking Organized Sport

38 = Learn how to accept criticism

39 = Working hard

40 = Friendship

41 = The experience you get

88 = Not Applicable

Annex C

Reasons for not liking Organized Sports

- 01 = Too many rules
- 02 = Practicing
- 03 = Away during sport season (i.e., summer)
- 04 = No time/Takes a lot of time
- 05 = Pressure to do well
- 06 = Too serious/Too competitive
- 07 = Generally dislike sports
- 08 = Too old
- 09 = When winning is the only thing
- 10 = When it is not fun
- 11 = Getting benched for no reason
- 12 = Disappointment of not doing well
- 13 = When coaches single out players on a team and
ridicule them in front of other players (#059)
- 14 = Can rely on one person to win games (#067)

88 = Not Applicable

Annex D

Spends Leisure Time

01 = Watching TV/Videos	34 = Help friends with problems
02 = Going to shopping mall with friends	35 = Do make-up, hair
03 = Hanging around/being with friends	36 = Go to parties
04 = Talking on the telephone	37 = Drugs, alcohol
05 = Reading	38 = Go to bars
06 = Working on cars	39 = Driving, cruising, driving lessons
07 = Outdoor Activities	40 = Write, writing letters, pen pals
08 = Listen to music	41 = Snow-mobiling
09 = Shopping	42 = Four-wheelers
10 = Singing/Acting/Playing a musical instrument	43 = Spectating sport events
11 = Modelling (fashion)	44 = Go to movies
12 = Non-organized sports	45 = Spend time with family
13 = Skate - roller, ice, boarding	46 = Going to restaurants
14 = Weight club	47 = Play road hockey
15 = Crafts	48 = Sleep
16 = Play pool	49 = Church, religion
17 = Collect cards, minatures, stamps	50 = Teach Sunday school, canoeing, outdoor activities, music
18 = Spend time with girlfriend or boyfriend	51 = Lessons - music, swimming, horseback riding
19 = Games - computer, other	52 = Go out
20 = Cook, bake	53 = Student council, leadership, yearbook editor
21 = Clean house	54 = Workout at gym/fitness centre
22 = Clubs, youth groups	55 = Darts
23 = Work - babysitting, farm work	56 = Referee - various sports
24 = Draw, paint	57 = Like to keep busy
25 = Riding dirtbike	58 = Horse shows, competitions
26 = Working on dirtbike	59 = Member of school team "Reach for the Top"
27 = Using computer, typing	60 = Travel
28 = Biking	61 = School band, choir, church choir
29 = Relax at home, relaxing	62 = Yard work
30 = Homework, studying	63 = At friend's house
31 = Various forms of dancing	64 = Arcade
32 = playing with dog, spend time with my animals	
33 = Electronics	

Annex D (continued)

Spends Leisure Time (Continued)

65 = Practising skills for sports involved in
66 = Go to favourite hangouts, clubs
67 = Practice DJ skills
68 = Build models, things
69 = Sit in coffee shops
70 = Have fun, have good time
71 = Dance clubs
72 = Have a smoke
73 = Volunteer work
74 = Spend money
75 = Meditation
76 = Enter contests
77 = Sexual activities
78 = Explore new places
79 = Play cards
80 = Thinking
81 = Steal

88 = Not applicable

Annex E

Why stopped playing Organized Sports

- 01 = Job
 - 02 = Parents
 - 03 = School Work
 - 04 = Kicked off team
 - 05 = Got boring
 - 06 = Started to smoke/Can't quit smoking/Out of shape
 - 07 = Lacked interest/Didn't feel like it any more
 - 08 = Just moved, don't know anyone/Moved to a rural area
 - 09 = No time
 - 10 = Injury (bad back, bad knee)
 - 11 = Wasn't very good (after moved to a larger school)
 - 12 = Too competitive
 - 13 = Too many cliques
 - 14 = No age group in the sports I like (#671)
 - 15 = "Not going to help in my future"
 - 16 = To train for something else (Air cadet
competition/music-symphony)
 - 17 = Fighting (#701)
 - 18 = Problems with teammates (#701)
 - 19 = Sport was too expensive
 - 20 = Illness
 - 21 = No growth-spurt, got scared (hockey goalie - #056)
 - 22 = Live in rural area, transportation to practices and
games was too much of a hassle (#060)
 - 23 = Enjoy non-organized sports more (#060)
 - 24 = Sport I prefer is not offered in this area (Rugby)
 - 25 = Coach (Too serious)
 - 26 = Friends don't play sports
 - 27 = Feel not good enough for any school team
 - 28 = Car accident which has limited physical ability
 - 29 = Too many extra-curricular activities
 - 30 = Wanted to work
 - 31 = Self conscious/ low self-esteem
 - 32 = Don't like rules
 - 33 = Not enough teams (individual lives in rural
community)
 - 34 = Didn't play much
 - 35 = Changed schools
-
- 88 = Not Applicable
-

CODING MANUAL (All schools except School A)

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Case ID	Caseid	1 to N
School	School	0 = School A 1 = School B 2 = School C 3 = School D
Age	Age	Age in years
Gender	Sex	0 = Female 1 = Male
Grade	Grade	09 to 13/OAC
Level of Instruction	Level	0 = General (10 to 12 ONLY) 1 = Advanced and blended
Community Size <i>*data not used</i>	Size	0 = Rural 1 = Village 2 = Town 3 = City
Job	Job	0 = No 1 = Yes
Hours per Week Worked	Jobhrs	Number of Hours 88 = N/A
Sport Participation	Sporpart	0 = No 1 = Yes
Name of Sport (Skip Cell #6 - "Spornam6")	Spornam1 to Spornam5	See Annex A 88 = N/A
Number of Years Played (Skip Cell #6 - "Sporyrs6")	Sporyrs1 to Sporyrs5	Number of Years 88 = N/A

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Sport Sponsor: School or Community (Skip Cell #6 - "Sporloc6")	Sporloc1 to Sporloc5	0 = School 1 = Community or Both 8 = N/A
Hours per Week Sport Played and Practised (Skip Cell #6 - "Sporhrs6")	Sporhrs1 to Sporhrs5	Number of Hours 88 = N/A
Season of the Year Played	Sporsns1 to Sporsns5	1 = One season 2 = Two seasons 3 = Three seasons 4 = Four seasons 8 = N/A

Skip Next 11 Cells

Leisure Time	Leis1 to Leis5	See Annex B 88 = N/A
Stopped Playing Organized Sports	Sporstop	0 = No 1 = Yes 8 = N/A
Reasons for Stopped Playing Organized Sports	Sporstp1 to Sporstp5	See Annex C 88 = N/A
Motivation for Playing Sports*	Sprmot1 to Sprmot25	0 = No 1 = Yes 8 = N/A
*for sub-scales see Sport Motivation scoring key at end of manual		

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Satisfaction from Playing Sports*	Sprsat1 to Sprsat10	1 = Extremely Dissatisfied 2 = Dissatisfied 3 = Neutral 4 = Satisfied 5 = Extremely Satisfied 8 = N/A
*for sub-scales see Sport Satisfaction scoring key at end of manual		
-----	-----	-----
Enjoyment from Playing Sports*	Sprenj1 to Sprenj10	1 = Strongly Disagree 2 = Disagree 3 = Undecided 4 = Agree 5 = Strongly Agree
*for sub-scales see Sport Enjoyment scoring key at end of manual		
-----	-----	-----
Level of Physical Activity Over Past Year (Work Right to Left)	Time0 (Current) to Time12	1 = None 2 = Low 3 = Moderate 4 = High 5 = Very High
Current Physical Activity (Type)	Act1MT to Act1SuT	See Annex D
Current Physical Activity (Duration)	Act1MD to Act1SuD	Duration in Minutes 888 = N/A
Current Physical Activity (Intensity)	Act1MI to Act1SuI	1 = Light 2 = Medium (Moderate) 3 = Heavy 8 = N/A
Current Physical Activity (Type)	Act2MT to Act2SuT	See Annex D

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Current Physical Activity (Duration)	Act2MD to Act2SuD to	Duration in Minutes 888 = N/A
Current Physical Activity (Intensity)	Act2MI to Act2SuI	1 = Light 2 = Medium (Moderate) 3 = Heavy 8 = N/A
Importance of Physical Activity <i>*data not used</i>	Reason1 to Reason6	1 = No Importance 2 = Little Importance 3 = Some Importance 4 = Very Important
Delinquent Beh.	DB1 to DB33	Initial coding: 1 = Never (A) 2 = Not In Last Year (B) 3 = Once In Last Year (C) 4 = Twice In Last Year (D) 5 = Three or More Times in Last Year (E)
Delinquent Beh.	DB 1 to DB33	Final Coding: 0 = Never/Not In Last Year 1 = Once In Last Year 2 = Twice In Last Year 3 = Three or More Times in Last Year

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Delinquent Sent.* - Law, Courts, Police	DS1 to DS25	1 = Strongly Agree (SA) 2 = Agree (A) 3 = Undecided (U) 4 = Disagree (D) 5 = Strongly Disagree (SD)
*for sub-scales see Delinquent Sentiments scoring key at end of manual		
Delinquent Sent.* - Tolerance for law violation - Identification with del. others	DS26 to DS41	1 = Strongly Disagree (SD) 2 = Disagree (D) 3 = Undecided (U) 4 = Agree (A) 5 = Strongly Agree (SA)
*for sub-scales see Delinquent Sentiments scoring key at end of manual		
Delinquent Pers.*	DP1 to DP63**	0 = True (T) 1 = False (F)
*see Delinquent Personality scoring key at end of manual **scoring for some of the items was the reverse of that shown - see scoring key		
Social Support for Delinquency*	SSDEL1A/SSDEL1B and SSDEL2A/SSDEL2B	1 = None 2 = Few 3 = Several 4 = Most
	SSDEL3 to SSDEL8	1 = No (N) 2 = Not Sure (NS) 3 = Yes (Y) 4 = Definitely Yes (DY)
*for sub-scales see Social Support for Delinquency scoring key at end of manual		

<u>Variable Label</u>	<u>Variable Name</u>	<u>Code</u>
Value of Education	VALED1 to VALED18*	1 = Strongly Agree (SA) 2 = Agree (A) 3 = Undecided (U) 4 = Disagree (D) 5 = Strongly Disagree (SD)

*scoring for half of the items was the reverse of that shown
- see Value of Education scoring key at end of manual

Skip Next 45 Cells

<u>Social Desirability*</u>	SD1 to SD28	0 = A 1 = B
-----------------------------	-------------	----------------

*scoring for half of the items was the reverse of that shown
- see Social Desirability scoring key at end of manual

Annex A

Sport Names

01 = Hockey
 02 = Baseball (Hardball) (Not Softball)
 03 = Football/Touch Football for Girls
 04 = Basketball
 05 = Swimming
 06 = Volleyball
 07 = Ringette
 08 = Figure Skating
 09 = Track & Field
 10 = Horseback Riding/Equestrian
 11 = Cross Country
 12 = Soccer
 13 = Badminton
 14 = Curling
 15 = Wrestling
 16 = Bowling
 17 = Golf
 18 = Rugby
 19 = Gymnastics
 20 = Softball
 21 = Field Hockey
 22 = Weightlifting (#663)
 23 = Broomball (#670)
 24 = Judo/Karate
 25 = Speedskating
 26 = Sailing
 27 = Skiing
 28 = Rowing
 29 = Biking
 30 = Tennis (#779)
 31 = Boxing
 32 = Cycling
 33 = Water Skiing

 88 = Not Applicable

NOTE: The following are not considered sports:

- Dancing
- Motorcross
- Cheerleading

Annex B

Spends Leisure Time

01 = Watching TV/Videos	34 = Help friends with problems
02 = Going to shopping mall with friends	35 = Do make-up, hair
03 = Hanging around/being with friends	36 = Go to parties
04 = Talking on the telephone	37 = Drugs, alcohol
05 = Reading	38 = Go to bars
06 = Working on cars	39 = Driving, cruising, driving lessons
07 = Outdoor Activities	40 = Write, writing letters, pen pals
08 = Listen to music	41 = Snow-mobiling
09 = Shopping	42 = Four-wheelers
10 = Singing/Acting/Playing a musical instrument	43 = Spectating sport events
11 = Modelling (fashion)	44 = Go to movies
12 = Non-organized sports	45 = Spend time with family
13 = Skate - roller, ice, boarding	46 = Going to restaurants
14 = Weight club	47 = Play road hockey
15 = Crafts	48 = Sleep
16 = Play pool	49 = Church, religion
17 = Collect cards, minatures, stamps	50 = Teach Sunday school, canoeing, outdoor activities, music
18 = Spend time with girlfriend or boyfriend	51 = Lessons - music, swimming, horseback riding
19 = Games - computer, other	52 = Go out
20 = Cook, bake	53 = Student council, leadership, yearbook editor
21 = Clean house	54 = Workout at gym/fitness centre
22 = Clubs, youth groups	55 = Darts
23 = Work - babysitting, farm work	56 = Referee - various sports
24 = Draw, paint	57 = Like to keep busy
25 = Riding dirtbike	58 = Horse shows, competitions
26 = Working on dirtbike	59 = Member of school team "Reach for the Top"
27 = Using computer, typing	60 = Travel
28 = Biking	61 = School band, choir, church choir
29 = Relax at home, relaxing	62 = Yard work
30 = Homework, studying	63 = At friend's house
31 = Various forms of dancing	64 = Arcade
32 = playing with dog, spend time with my animals	
33 = Electronics	

Annex B (continued)

Spends Leisure Time (Continued)

- 65 = Practising skills for sports involved in
- 66 = Go to favourite hangouts, clubs
- 67 = Practice DJ skills
- 68 = Build models, things
- 69 = Sit in coffee shops
- 70 = Have fun, have good time
- 71 = Dance clubs
- 72 = Have a smoke
- 73 = Volunteer work
- 74 = Spend money
- 75 = Meditation
- 76 = Enter contests
- 77 = Sexual activities
- 78 = Explore new places
- 79 = Play cards
- 80 = Thinking
- 81 = Steal

88 = Not applicable

Annex C

Why stopped playing Organized Sports

- 01 = Job
- 02 = Parents
- 03 = School Work
- 04 = Kicked off team
- 05 = Got boring
- 06 = Started to smoke/Can't quit smoking/Out of shape
- 07 = Lacked interest/Didn't feel like it any more
- 08 = Just moved, don't know anyone/Moved to a rural area
(#655)
- 09 = No time
- 10 = Injury (bad back, bad knee)
- 11 = Wasn't very good (after moved to a larger school)
- 12 = Too competitive
- 13 = Too many cliques
- 14 = No age group in the sports I like (#671)
- 15 = "Not going to help in my future"
- 16 = To train for something else (Air cadet competition,
music-symphony)
- 17 = Fighting (#701)
- 18 = Problems with teammates (#701)
- 19 = Sport was too expensive
- 20 = Illness
- 21 = No growth-spurt, got scared (hockey goalie - #056)
- 22 = Live in rural area, transportation to practices and
games was too much of a hassle (#060)
- 23 = Enjoy non-organized sports more (#060)
- 24 = Sport I prefer is not offered in this area (Rugby)
- 25 = Coach (Too serious)
- 26 = Friends don't play sports
- 27 = Feel not good enough for any school team
- 28 = Car accident which has limited physical ability
- 29 = Too many extra-curricular activities
- 30 = Wanted to work
- 31 = Self conscious/ low self-esteem
- 32 = Don't like rules
- 33 = Not enough teams (individual lives in rural
community)
- 34 = Didn't play much
- 35 = Changed schools

 88 = Not Applicable

Annex D

Variable: Current Physical ActivityActivity 1 and Activity 2

- 01 = Walking/Walked dog
- 02 = Skating/Hockey
- 03 = Bowling
- 04 = Exercise Class/Skipping/Aerobics/Stair Master
- 05 = Snowboarding/Tobogganing/Sledding
- 06 = Swimming
- 07 = Cleaning/Chores/Work/Construction work
- 08 = Biking
- 09 = Dancing/Highland dancing
- 10 = Sledding (combined with #5)
- 11 = Soccer
- 12 = Running/Jogging
- 13 = Theatre work
- 14 = Automotive work
- 15 = Cheerleading
- 16 = Gymnastics
- 17 = Rowing
- 18 = Weights/Isometrics/Working out/Gym
- 19 = Road Hockey
- 20 = Basketball/Basketball Practice
- 21 = Skiing
- 22 = Stationary bike
- 23 = Wrestling/Boxing
- 24 = Baseball
- 25 = Badminton
- 26 = Tennis
- 27 = Rugby
- 28 = Volleyball
- 29 = Horseback riding
- 30 = Hiking
- 31 = Football
- 32 = Karate
- 33 = Skate boarding/Roller blading
- 34 = Hacky sack/Devil sticks
- 35 = Target shooting
- 36 = Fishing
- 37 = Farming (#132)
- 38 = Golf
- 39 = Hunting

 88 = Not Applicable (No activity)
 indicates that this section was not completed

SCORING KEYS

Scoring Key - Sport Motivation

<u>Sub-scales</u>	<u>Item Numbers</u>
<i>Conflict</i>	1, 6, 12, 14, 17
<i>Competition</i>	2, 7, 10, 20, 24
<i>Competence</i>	3, 11, 16, 19, 23
<i>Cooperation</i>	4, 8, 15, 21, 25
<i>Aggression</i>	5, 9, 13, 18, 22

- scoring: 0 = No; 1 = Yes

- higher cumulative score = greater motivation

Scoring Key - Sport Satisfaction

<u>Sub-scales</u>	<u>Item Numbers</u>
<i>Coach's Leadership</i>	4,5,6,7,8,9,10
<i>Personal Outcome</i>	1,2,3

- scoring: 1 = extremely dissatisfied
2 = dissatisfied
3 = neutral
4 = satisfied
5 = extremely satisfied
- higher cumulative score = greater satisfaction

Scoring Key - Sport Enjoyment

<u>Sub-scales</u>	<u>Item Numbers</u>
<i>Intrinsic/process factors</i>	1,2,5,7,9
<i>Extrinsic/product factors</i>	3,6,10
<i>Social factors</i>	4,8

- scoring: 1 = strongly disagree
2 = disagree
3 = undecided
4 = agree
5 = strongly agree
- higher cumulative score = greater enjoyment

Scoring Key - Delinquent Personality

<u>Sub-scales</u>	<u>Item Numbers</u>
<i>Psychopathy</i> 25 items	<u>true = 1, false = 0</u> 2, 17, 20, 26, 27, 28, 30, 33, 35, 44, 45, 49, 51, 52, 53, 54, 56, 57, 58, 60, 61, 62, 63 <u>false = 1, true = 0</u> 15, 48 - higher cumulative score = greater degree of psychopathy
<i>Neuroticism</i> 27 items	<u>true = 1, false = 0</u> 3, 6, 7, 8, 9, 10, 13, 14, 16, 18, 19, 22, 23, 24, 29, 32, 34, 36, 37, 40, 42, 47, 52, 55, 59 <u>false = 1, true = 0</u> 12, 38 - higher cumulative score = greater degree of neuroticism
<i>Inadequacy/ Immaturity</i> 9 items	<u>true = 1, false = 0</u> 1, 5, 31, 39, 41, 43, 46, 50 <u>false = 1, true = 0</u> 38 - higher cumulative score = greater degree of inadequacy/immaturity
<i>Scholastic Maladjustment</i> 12 items	<u>true = 1, false = 0</u> 1, 10, 14, 21, 23, 25, 26, 30, 41, 43 <u>false = 1, true = 0</u> 4, 11 - higher cumulative score = greater degree of scholastic maladjustment

Scoring Key - Social Support For Delinquency

<u>Sub-scales</u>	<u>Item Numbers</u>
<i>Delinquent Ties</i>	
A. Ties to Thieves:	1a + 2a
B. Ties to Aggressors:	1b + 2b
<i>Ties to Delinquents</i>	1a + 1b + 2a + 2b
<i>Delinquent Resources</i>	3 + 4 + 5
<i>Delinquent Models</i>	6 + 7 + 8
<i>Delinquent Resources and Models</i>	3 + 4 + 5 + 6 + 7 + 8
<i>Social Support for Delinquency (Total)</i>	1a + 1b + + 2a + 2b + 3 + 4 + 5 + 6 + 7 + 8
- higher cumulative score = greater social support for delinquency	

Scoring Key - Value of Education

<u>Item Numbers</u>	<u>Scoring</u>				
	$\frac{SA}{1}$	$\frac{A}{2}$	$\frac{U}{3}$	$\frac{D}{4}$	$\frac{SD}{5}$
2,4,6,9,11,13,14,17,18					
1,3,5,7,8,10,12,15,16	5	4	3	2	1
- higher cumulative score = more conventional values					

Scoring Key - Social Desirability Scale

Item Numbers

Scoring

if "A" circled for the following items: score 1
if "B" circled for the following items: score 0
4, 5, 8, 9, 12, 13, 16, 19, 20, 21, 25, 26, 28

if "B" circled for the following items: score 1
if "A" circled for the following items: score 0
3, 6, 7, 10, 11, 14, 15, 17, 18, 22, 23, 24, 27

- number of items = 28
- total possible score = 26; item numbers 1 and 2 not used in calculation of social desirability score, they are trial/practice items only.
- higher cumulative score = greater probability student is presenting self in overly good light

APPENDIX D

Letter to School Boards Requesting
Permission to Undertake Research

Research Proposal Brief

Letter to School Principals

Information Sheet for Teachers

Student Informed Consent Forms for Those
Students Who Have Reached the Age of Majority

Letters to Parents

Parental Informed Consent Forms

Student Informed Consent Forms (Minors)

Letters of Thanks to Individual
Schools and to School Boards

(Sample letter requesting permission to undertake research
in a school board's jurisdiction.)

February __, 199_.

Mr. _____,
Superintendent of Education,
_____ Board of Education,
_____ Avenue,
_____, Ontario,
_____.

Dear Mr. _____,

This is by way of follow-up to our telephone conversation of a of month or so ago. During that conversation I outlined to you a research project I am interested in undertaking (along with a faculty member of the Psychology Department, Carleton University) in one of the Board's Secondary Schools. The project concerns the examination of the relationship between athletic participation, the motivation associated with such participation and the potential effect on delinquent behaviour amongst adolescents (i.e., secondary school students).

You indicated that I should forward to you an application to undertake the research including documentation detailing the scope and nature of the research project. Attached, therefore, is:

- a completed application form;
- evidence of Ethics Committee approval from Carleton University;
- a one-page information sheet for teachers;
- a brief, one-page research proposal abstract (a much more detailed research proposal is available if desired);
- a proposed information letter to parents with attached parental and student consent forms;
- copies of the questionnaires to be used in the study; and
- a debriefing information sheet for students to read once they have completed the questionnaires.

Please note that the questionnaires have been labelled for ease of identification for your review; these labels would not appear on the actual questionnaires given to the students. Otherwise the questionnaires are as they will be when presented to the students for completion.

I would appreciate the opportunity to discuss the proposal with you at your earliest convenience. I would be particularly interested in receiving any feedback that you or your staff might wish to provide and in seeking your advice concerning an appropriate secondary school in which to mount the research. Once I have had the opportunity of speaking with you (and hopefully receiving permission to proceed in principle), I would undertake to contact the Principal of the suggested school(s) in order to seek his or her support and cooperation.

I can be reached at xxx-xxxx, extension xxxx.

Thank you for your anticipated cooperation.

R. E. Watkins, M.Sc., C.Psych. (Alta.),
Director, Psychology,
Regional Treatment Centre,
The Correctional Service of Canada,
xxxxxxx, Ontario,
xxx xxx.

Research Project Abstract

(Submitted to School Boards for Permission to Conduct
Research in Board Schools)

Title: A Social Psychological Examination of the
Relationship Between Athletic Participation and Delinquent
Behaviour.

Rationale for the Study: The purpose of this research is to
examine the relationship between athletic participation,
self-reported delinquent behaviour and differences in
motivation profiles between sport participant groups and
non-participant groups and between those reporting
delinquent behaviour and those reporting no such behaviour.
Previous research conducted in the United States in the
sociology and psychology of sport has indicated that amongst
youth:

- 1) athletic participation may have an inhibitory and/or
deterrent effect on delinquent behaviour; 2) when the
appropriate social conditions and personal attitudes,
values and beliefs coincide, activities such as
athletic participation may be particularly effective in
preventing and/or inhibiting delinquent behaviour; and
3) participation in athletic or sport activities on the
part of individuals who also commit delinquent acts may
contribute to the lessening of the seriousness of those
acts.

The present study will attempt to determine the
appropriateness of these conclusions in a Canadian context.
Additionally, it will attempt to extend our understanding of
these relationships by examining the role played by the
enjoyment and satisfaction one gets from participation in
sport and one's general level of physical activity.

Method, Data Collection and Logistical Details: A sample of
secondary school students (male and female; athletic
participants and non-participants) will be requested to
complete a series of questionnaires. A total of
approximately two hundred and fifty (250) to three hundred
(300) students from all grades (9 to OAC, two classes per
grade), would be involved. For grades 10 to 12, both the
general and advanced levels of instruction would be sampled.

The questionnaires to be administered have been
developed at Carleton University and elsewhere. They have
been approved by the Ethics Committee of the Department of
Psychology of that institution. They touch on the following
areas: 1) demographic information (age, gender, grade,
etc.); 2) various aspects of athletic participation; 3)
self-reported delinquent behaviour; 4) attitudes toward the

justice system; 5) personality; 6) social environment as it relates to delinquency; 7) value of education; and 8) a measure of response bias.

It is proposed to administer the questionnaires to groups of 25 to 30 students at a time in a classroom setting. The time required to complete them is approximately 45 to 50 minutes. Testing sessions would take place as soon as possible once Board of Education approval for access to the school(s) is given.

Participants' responses will be collected anonymously (i.e., their names will not appear on the questionnaires) in order to ensure confidentiality. Access to school records is not required. It is important to note that participation in this study *in no way presumes or implies that the participating individual has engaged in delinquent behaviour of any kind.*

(Sample letter to school principal requesting permission to
conduct research in his/her school once school board
approval had been received)

November __, 199__.

Mr. _____,
Principal,
_____ Secondary School.

Dear Mr./Mrs./Ms. _____,

This is by way of follow-up to our meeting/telephone of October __th. At that time I outlined to you a research project I am interested in undertaking (along with a faculty member of the Psychology Department, Carleton University) concerning the relationship between athletic participation and delinquent behaviour amongst adolescent boys and girls. As mentioned, the research project has been reviewed and approved by the _____ School Board's research committee. You requested that I submit for your review copies of the questionnaires to be used in the study.

Attached are copies of the questionnaires. Please note that they have been labelled for ease of identification for your review. These labels would not appear on the actual questionnaires given to the students. Otherwise they are as they would be when presented to the students for completion.

Also included in the package are a proposed letter to parents explaining the scope and purpose of the study, a proposed parental consent form and a very brief research proposal abstract (a much more detailed research proposal is available should you wish to review it).

You may recall that I was proposing to administer the questionnaires to representative English classes from each grade level and, for grades 10 to OAC, to each level of instruction (i.e., general and advanced). This approach is a suggested way of proceeding. I am, of course, open to alternative suggestions should it be preferable or necessary.

I would appreciate any feedback that you might wish to provide. I certainly hope that you will find the research project of interest and importance and that you will be willing to grant access to members of the student body of Bayridge Secondary School.

I can be reached at xxx-xxxx, extension xxxx during the day or at xxx-xxxx in the evenings should you require more information or should you wish to discuss the project further.

R. E. Watkins, M.Sc., C.Psych.(Alta.)

INTRODUCTION TO RESEARCH PROJECT

(Information Sheet for Teachers)

The purpose of this research, in general terms, is to explore how youth and young adults see the world around them, how they feel about the things they see and how they feel about the experiences they have had. Within those general parameters, the intent of this particular project is to examine the relationship between athletic participation, self-reported delinquent behaviour and differences in motivation profiles between sport participant groups and non-participant groups and between those reporting delinquent behaviour and those reporting no such behaviour. The usefulness of the information obtained by this research project will depend entirely upon the willingness of the students in your class to be thoughtful and honest in their responses.

The students are being asked to respond to a series of questionnaires. The questionnaires touch on the following areas: 1) demographic information; 2) sport participation, satisfaction, motivation, and enjoyment, and general level of physical activity; 3) behaviour (self-reported delinquent behaviour); 4) attitude toward the justice system; 5) personality; 6) social environment; 7) value of education; and 8) orientation toward social desirability (response bias).

The questionnaire package will take approximately 45 to 50 minutes to complete. The information gathered through the questionnaires will be collected anonymously (i.e., the respondent's name will not appear on the questionnaires) in order to ensure the complete confidentiality of the responses. The information gathered will not appear in any school records, it will not be seen by anybody other than the researchers involved in this study, and it will not be used for any other purpose than the research purposes outlined above. It is important to note that participation in this study *in no way presumes or implies that the student has engaged in delinquent behaviour of any kind.*

It is also important to appreciate that this is not a test! Most of the responses to the questionnaires do not take the form of right or wrong answers, or good or bad answers. The answers should be the ones that best show how the student thinks and feels about what he or she sees and does.

For a more detailed, summary account of the research project please see the attached document.

Your cooperation in having your students complete these questionnaires is very much appreciated.

THANK YOU

Student Participant Informed Consent Form

(For Students Who Have Reached the Age of Majority)

I _____

(Please Print Your Name Here)

agree to participate in a research project conducted by R. E. Watkins of the Department of Psychology, Carleton University.

The purpose of this research is to examine the relationship between athletic participation, certain kinds of behaviour and a person's motivation for participating in sports. I understand that I will be asked to respond to nine (9) questionnaires and that it will take approximately 45 to 50 minutes to complete them. The information gathered through the questionnaires will be collected anonymously (i.e., my name will not appear on the questionnaires) in order to ensure the confidentiality of my responses. The information will not appear in any school records, it will not be seen by anybody other than the researchers involved in this study, and it will not be used for any other purpose than the research purposes outlined above.

The nine (9) questionnaires I will be asked to complete are as follows: 1) demographic information; 2) sport questionnaire; 3) behaviour questionnaire; 4) attitude toward the justice system questionnaire; 5) personality questionnaire; 6) social environment questionnaire; 7) value of education questionnaire; 8) motivation for sport participation questionnaire; and 9) orientation toward social desirability. I agree to follow the directions given for each questionnaire. I may, however, decide to skip an item or a question if, for personal or other reasons, I do not wish to respond to it.

My participation in this study is voluntary. I realize that neither my school nor the _____ Board of Education requires me to participate.

(Signature)

(Date)

(This information is confidential and is protected under the Freedom of Information and Protection of Privacy Act, 1989 [Bill 49]).

Letter to Parents
(Rural Public School Board)

Dear Parents:

A project concerned with understanding the motivation for participation in athletic programs/sport activities and the effects of such participation on certain kinds of behaviour is being conducted by researchers from the Department of Psychology, Carleton University. The Principal of your child's school has granted permission to the researchers to request your cooperation in undertaking this study. Specifically, permission is requested for the participation of your son or daughter in the study.

The purpose of the research is to explore the relationship between athletic participation, the motivation for such participation and the potential effect it may have on certain behaviour, in this case self-reported delinquent behaviour. We are seeking a sample of students who may or may not be involved in athletic programs at school or in the community and requesting that they complete a set of questionnaires. It is important to note that participation in this study *in no way presumes or implies that the participating individual has engaged in delinquent behaviour of any kind*. Participation is voluntary. You or your child may withdraw his or her involvement in the study at any time. Furthermore, should your child participate in the

study, he or she may skip any particular item or question contained in the questionnaires if, for personal or other reasons, he or she does not wish to respond to it.

Students will be asked to complete a set of nine questionnaires. The questionnaires seek information concerning the following areas:

- demographic information (e.g., age, gender, grade);
- details of any athletic participation;
- motivation for participating in sports/athletics;
- behaviour scale;
- attitudes toward the justice system;
- a short personality assessment;
- an assessment of social and peer support for delinquent behaviour;
- attitudes toward the value of education;
- orientation toward social desirability.

The questionnaires will be administered in one sitting in a classroom setting at the school. The total time commitment requested of the student will be approximately 45 to 50 minutes.

Please note that participants' responses will be collected anonymously (i.e., their names will not appear on the questionnaires) in order to ensure confidentiality. The information will not appear in any school records, will be seen only by the researcher involved in this study, and will be used solely for the research purposes outlined above.

If you have any questions concerning this project, please contact the principal researcher at the telephone number given below.

We would be grateful if you would fill out the attached consent form and return it within the week to the school. Please return the form even if you do not give permission for your son or daughter to participate. Thank you.

Yours truly,

R. E. Watkins, M.Sc.
Principal Researcher,
Telephone number: xxx-xxxx, Ext. xxxx, during regular working hours or xxx-xxxx in the evening.

Other contacts:

- 1) Faculty Sponsor:
Dr. D. A. Andrews,
Professor,
Department of Psychology,
Carleton University,
Telephone: (613) xxx-xxxx, ext. xxxx.
- 2) Chair of the Ethics Committee,
Department of Psychology,
Carleton University:
Dr. L. Paquet,
Telephone: (613) xxx-xxxx, ext. xxxx.
- 3) Chair of the Psychology Department,
Carleton University:
Dr. W. Jones,
Telephone: (613) xxx-xxxx, ext. xxxx.

PARENTAL INFORMED CONSENT FORM

We would be grateful for your cooperation in granting permission for your child to participate in the research project outlined in the attached letter. However, whether or not you wish your child to participate, it is requested that you complete the form below and return it to the school within the next week.

___ I give permission for my son/daughter to participate.

___ I do not give permission for my son/daughter to participate.

NAME OF

STUDENT: _____ DATE: _____

SIGNATURE OF PARENT OR

GUARDIAN: _____

This information is confidential and is protected under the Freedom of Information and Protection of Privacy Act, 1989 (Bill 49).

Letter to Parents

(Urban Separate School Board)

Dear Parents:

A project concerned with understanding the motivation for participation in athletic programs/sport activities and the effects of such participation on certain kinds of behaviour is being conducted by researchers from the Department of Psychology, Carleton University. The Principal of your child's school, with the concurrence of the School Board, has granted permission to the researchers to request your cooperation in undertaking this study. Specifically, permission is requested for the participation of your son or daughter in the study.

The purpose of the research is to explore the relationship between athletic participation, the motivation for such participation and the potential effect it may have on certain behaviour, in this case self-reported delinquent behaviour. We are seeking a sample of students who may or may not be involved in athletic programs at school or in the community and requesting that they complete a set of questionnaires. It is important to note that participation in this study *in no way presumes or implies that the participating individual has engaged in delinquent behaviour of any kind*. Participation is voluntary. You or your child may withdraw his or her involvement in the study at any

time. Furthermore, should your child participate in the study, he or she may skip any particular item or question contained in the questionnaires if, for personal or other reasons, he or she does not wish to respond to it.

Students will be asked to complete a set of nine (9) questionnaires. The questionnaires seek information concerning the following areas:

- demographic information (e.g., age, gender, grade);
- details of any athletic participation;
- motivation for participating in sports/athletics;
- behaviour scale;
- attitudes toward the justice system;
- a short personality assessment;
- an assessment of social and peer support for delinquent behaviour;
- attitudes toward the value of education;
- orientation toward social desirability.

The questionnaires will be administered in one sitting in a classroom setting at the school. The total time commitment requested of the student will be approximately 50 minutes.

Please note that participants' responses will be collected anonymously (i.e., their names will not appear on the questionnaires) in order to ensure complete confidentiality. The information will not appear in any school records, will be seen only by the researcher involved in this study, and will be used solely for the research purposes outlined above.

If you have any questions concerning this project, please contact the principal researcher at the telephone number given below.

We would be grateful if you would fill out the attached consent form and return it within the week to the school. Please return the form even if you do not give permission for your son or daughter to participate. Thank you.

Yours truly,

R. E. Watkins, M.Sc.
Principal Researcher,
Telephone number: xxx-xxxx, Ext. xxxx.

Other contacts:

- 1) Faculty Sponsor:
Dr. D. A. Andrews,
Professor,
Faculty sponsor of the research project,
Department of Psychology,
Carleton University,
Ottawa, Ontario.
Telephone: (613) xxx-xxxx, ext. xxxx.
- 2) Chair of the Ethics Committee,
Department of Psychology,
Carleton University:
Dr. L. Paquet,
Telephone: (613) xxx-xxxx, ext. xxxx.
- 3) Chair of the Psychology Department,
Carleton University:
Dr. W. Jones,
Telephone: (613) xxx-xxxx, ext. xxxx

PARENTAL INFORMED CONSENT FORM

We would be grateful for your cooperation in granting permission for your son or daughter to participate in the research project outlined below (See Student Participant Consent Form). However, whether or not you wish your child to participate, it is requested that you complete the form below and return it to the school within the next week.

___ I give permission for my son/daughter to participate.

___ I do not give permission for my son/daughter to participate.

(SIGNATURE OF PARENT OR GUARDIAN)

(DATE)

Student Participant Informed Consent Form

I

(Please Print Your Name Here)

agree to participate in a research project conducted by R. E. Watkins of the Department of Psychology, Carleton University.

The purpose of this research is to examine the relationship between athletic participation, certain kinds of behaviour and a person's motivation for participating, or for not participating, in sports. I understand that I will be asked to respond to a series of questionnaires and that it will take approximately 45 to 50 minutes to complete them. The information gathered through the questionnaires will be collected anonymously (i.e., my name will not appear on the questionnaires) in order to ensure the confidentiality of my responses. The information will not appear in any school records, it will not be seen by anybody other than the researchers involved in this study, and it will not be used for any other purpose than the research purposes outlined above.

The questionnaires I will be asked to complete are as follows: 1) demographic information; 2) a series of sport questionnaires; 3) behaviour questionnaire; 4) attitude toward the justice system questionnaire; 5) personality questionnaire; 6) social environment questionnaire; 7) value of education questionnaire; and 8) orientation toward social desirability questionnaire. I agree to follow the directions given for each questionnaire. I may, however, decide to skip an item or a question if, for personal or other reasons, I do not wish to respond to it.

My participation in this study is voluntary. I realize that neither my school nor the _____ School Board requires me to participate.

(Student's Signature)

(Date)

(This information is confidential and is protected under the Freedom of Information and Protection of Privacy Act, 1989 [Bill 49]).

If you have any questions concerning this project, please contact the principal researcher at the telephone number given below:

R. E. Watkins, M.Sc.,
Principal Researcher,
Telephone number: xxx-xxxx, Ext. xxxx.

Other contacts:

- 1) Faculty Sponsor:
Dr. D. A. Andrews,
Professor (Faculty sponsor of the research project),
Department of Psychology,
Carleton University,
Ottawa, Ontario.
Telephone: (613) xxx-xxxx, ext. xxxx.
- 2) Chair of the Ethics Committee,
Department of Psychology,
Carleton University:
Dr. L. Paquet,
Telephone: (613) xxx-xxxx, ext. xxxx.
- 3) Chair of the Psychology Department,
Carleton University:
Dr. W. Jones,
Telephone: (613) xxx-xxxx, ext. xxxx

Letter to Parents

(Urban Public School Board)

Dear Parents:

A project concerned with understanding the motivation for participation in athletic programs/sport activities and the effects of such participation is being conducted by researchers from the Department of Psychology, Carleton University. The Research Committee of the _____ Board of Education and the Principal of your child's school have granted permission to request your cooperation in permitting the participation of your son or daughter in the study.

The purpose of the research is to explore the relationship between athletic participation, the motivation for such participation and the potential effect it may have on certain behaviour, in this case self-reported delinquent behaviour. We are seeking a sample of students who may or may not be involved in athletic programs at school or in the community and requesting that they complete a set of questionnaires. It is important to note that participation in this study *in no way presumes or implies that the participating individual has engaged in delinquent behaviour of any kind*. Participation is voluntary. You or your child may withdraw his or her involvement in the study at any time. Furthermore, should your child participate in the

study, he or she may skip any particular item or question contained in the questionnaires if, for personal or other reasons, he or she does not wish to respond to it.

Students will be asked to complete a series of questionnaires. The questionnaires seek information concerning the following areas:

- demographic information (e.g., age, gender, grade, etc.);
- details of any athletic participation;
- motivation for participating in sports/athletics;
- enjoyment and satisfaction gained from athletic participation;
- an indication of general level of physical activity;
- behaviour scale;
- attitudes toward the justice system;
- a short personality assessment;
- an assessment of one's social environment;
- attitudes toward the value of education;
- orientation toward social desirability.

The questionnaires will be administered in one sitting in a classroom setting at the school. The total time commitment requested of the student will be approximately 45 to 50 minutes.

Please note that participants' responses will be collected anonymously (i.e., their names will not appear on the questionnaires) in order to ensure complete confidentiality. The information will not appear in any school records, will be seen only by the researcher involved in this study, and will be used solely for the research purposes outlined above.

If you have any questions concerning this project, please contact the principal researcher at the telephone number given below.

We would be grateful if you would fill out the attached consent form and return it within the week to the school. Please return the form even if you do not give permission for your son or daughter to participate. Thank you.

yours truly,

R. E. Watkins, M.Sc.
Principal Researcher,
Telephone number: xxx-xxxx, Ext. xxxx.

Other contacts:

- 1) Faculty Sponsor:
Dr. D. A. Andrews,
Professor,
Department of Psychology,
Carleton University,
Telephone: (613) xxx-xxxx, ext. xxxx.
- 2) Chair of the Ethics Committee,
Department of Psychology,
Carleton University:
Dr. L. Paquet,
Telephone: (613) xxx-xxxx, ext. xxxx.
- 3) Chair of the Psychology Department,
Carleton University:
Dr. W. Jones,
Telephone: (613) xxx-xxxx, ext. xxxx.

PARENTAL INFORMED CONSENT FORM

We would be grateful for your cooperation in granting permission for your child to participate in the research project outlined in the attached letter. However, whether or not you wish your child to participate, it is requested that you complete the form below and return it to the school within the next week.

___ I give permission for my son/daughter to participate.

___ I do not give permission for my son/daughter to participate.

(SIGNATURE OF PARENT OR GUARDIAN)

(DATE)

Student Participant Informed Consent Form

I

(Please Print Your Name Here)

agree to participate in a research project conducted by R. E. Watkins of the Department of Psychology, Carleton University.

The purpose of this research is to examine the relationship between athletic participation, certain kinds of behaviour and a person's motivation for participating (or not participating) in sports. I understand that I will be asked to respond to a series of questionnaires and that it will take approximately 45 to 50 minutes to complete them. The information gathered through the questionnaires will be collected anonymously (i.e., my name will not appear on the questionnaires) in order to ensure the confidentiality of my responses. The information will not appear in any school records, it will not be seen by anybody other than the researchers involved in this study, and it will not be used for any other purpose than the research purposes outlined above.

The questionnaires I will be asked to complete are as follows: 1) demographic information; 2) a series of sport questionnaires; 3) behaviour questionnaire; 4) attitude toward the justice system questionnaire; 5) personality questionnaire; 6) social environment questionnaire; 7) value of education questionnaire; and 8) orientation toward social desirability. I agree to follow the directions given for each questionnaire. I may, however, decide to skip an item or a question if, for personal or other reasons, I do not wish to respond to it.

My participation in this study is voluntary. I realize that neither my school nor the _____ Board of Education requires me to participate.

(Signature)

(Date)

(This information is confidential and is protected under the Freedom of Information and Protection of Privacy Act, 1989 [Bill 49]).

LETTERS OF THANKS TO SCHOOL BOARDS

Psychology Department,
Regional Treatment Centre (Ontario),
xxxxxxx, Ontario,
xxx xxx.

June 21, 199x.

Mr. -----,
Superintendent of Education,
----- Board of Education,
--- ----- Avenue,
Postal Bag ---,
-----, Ontario,
--- ---.

Dear Mr. -----,

RE: Research Project Examining The Relationship Between
Athletic Participation And Delinquent Behaviour

The purpose of this letter is to express to you, on behalf of Dr. Don Andrews of the Department of Psychology, Carleton University, and myself, our appreciation for the permission granted us to approach the Principals of the Board's secondary schools concerning participation in the above-noted research project.

Four secondary schools were approached: -----, -----, ----- and ----- . Of those four, ----- and ----- agreed to participate. (Two other secondary schools from other area school boards also participated.) We have expressed our appreciation directly to the Principals, staff and students involved.

Data collection is now complete, data entry and analysis has begun. Once this process is complete and written documentation is prepared, we will provide you and the schools involved with a report of the results. Should further data be required, it is hoped that we may approach other Board schools in the fall.

Once again, our thanks for your cooperation.

Yours Sincerely,

R. E. Watkins, M.Sc., C.Psych.(Alta),
Director of Psychology.

LETTERS OF THANKS TO SCHOOLS INVOLVED IN RESEARCH

March 10, 199x.

Mr. -----,
Principal,
----- Secondary School,
-----,
-----, Ontario,
--- ---.

Dear Mr. -----,

RE: Research Project Examining The Relationship Between
Athletic Participation And Delinquent Behaviour

The purpose of this letter is to express to you, on behalf of Dr. Don Andrews of the Department of Psychology, Carleton University, and myself, our appreciation for the permission granted us to approach the student body of the school concerning participation in the research project and for the cooperation and assistance extended us by the staff and students in the conducting of the research.

In particular, we wish to express our gratitude to -----, Head of the English Department, for coordinating the administration of the questionnaire battery and to those of his staff who were also involved in the process. A word of thanks is also due to ---- -, Athletic Director, for his useful and critical review of the research proposal, the questionnaires and the research methodology.

Data collection is currently ongoing at a couple of other secondary schools in the area. Once this process is finished and analysis of the data is complete, we will provide you with a written report of the results.

Once again, our thanks to the staff and student body of ----- Secondary School.

Yours Sincerely,

R. E. Watkins, M.Sc., C.Psych.(Alta).

cc. Mr. -----, Head of the English Department,
----- S.S.

Mr. ---- -, Athletic Director, ----- S.S.

June 1, 199x.

Mr. -. -----,
Principal,
----- Secondary School,
P.O. Box ---, Station "-",
-----, Ontario,
--- ---.

Dear Mr. -----,

RE: Research Project Examining The Relationship Between
Athletic Participation And Delinquent Behaviour

The purpose of this letter is twofold: first, to express to you, on behalf of Dr. Don Andrews of the Department of Psychology, Carleton University, and myself, our sincere appreciation for the permission granted us to approach the student body of the ---- S.S. concerning participation in the research project and for the cooperation and assistance extended us by the staff and students of the school in the conducting of the research; and second, to ascertain the completion status of the last batch of questionnaires that you undertook to provide us (i.e., one additional class each of Grades 10 and 11 general level and an OAC).

In particular, we wish to express our gratitude to Mr. --- of Student Services for stepping in and coordinating the administration of the questionnaire battery following the departure of Dr. ----- His efforts were most helpful and were greatly appreciated. A sincere word of thanks is also due to those of the teaching staff who administered the questionnaires during their class periods.

Data collection is currently ongoing at a couple of other secondary schools in the area. Once this process is finished and analysis of the data is complete, we will provide you with a written report of the results.

Once again, our thanks to the staff and student body of ---- Secondary School.

Yours Sincerely,

R. E. Watkins, M.Sc., C.Psych.(Alta).

cc. Mr. --- -----, Student Services Dept., ---- S.S.

June 1, 199x.

Mr. -. -----,
Principal,
-----,
--- ----- Street,
-----, Ontario,
--- ---.

Dear Mr. -----,

RE: Research Project Examining The Relationship Between
Athletic Participation And Delinquent Behaviour

The purpose of this letter is to express to you, on behalf of Dr. Don Andrews of the Department of Psychology, Carleton University, and myself, our appreciation for the permission granted us to approach the student body of the school concerning participation in the research project and for the cooperation and assistance extended us by staff members and students in the conducting of the research.

In particular, we wish to express our gratitude to Messrs. ---- -, ---- -, and ---- - for coordinating the administration of the questionnaire battery and allowing access to their students. Their efforts were most helpful and were greatly appreciated.

Data collection is currently ongoing at a couple of other secondary schools in the area. Once this process is finished and analysis of the data is complete, we will provide you with a written report of the results.

Once again, our thanks to the participating staff and students of -----.

Yours Sincerely,

R. E. Watkins, M.Sc., C.Psych.(Alta).

cc. Mr. -----, Experience Canada, -----.
Mr. -----, Student Counselling and FIT TO LIVE
Program, -----.
Mr. -----,
Mr. -----, FIT TO LIVE Program, -----.

June 10, 199x.

Mr. ---- -. ----,
Principal,
----- High School,
-----, Ontario,
--- ---.

Dear Mr. ----,

RE: Research Project Examining The Relationship Between
Athletic Participation And Delinquent Behaviour

The purpose of this letter is to express to you, on behalf of Dr. Don Andrews of the Department of Psychology, Carleton University, and myself, our appreciation for the permission granted us to approach the student body of the school concerning participation in the research project and for the cooperation and assistance extended us by staff members and students in the conducting of the research.

In particular, we wish to express our gratitude to Mr. --- -----, Vice Principal, for coordinating the administration of the questionnaire battery. His efforts were most helpful and were greatly appreciated. A sincere word of thanks is also due to those of the teaching staff who administered the questionnaires to their students during class periods. Their efforts were most helpful and were greatly appreciated.

Data collection is currently ongoing at a couple of other secondary schools in the area. Once this process is finished and analysis of the data is complete, we will provide you with a written report of the results.

Once again, our thanks to the participating staff and students of ----- High School.

Yours Sincerely,

R. E. Watkins, M.Sc., C.Psych.(Alta).

cc. Mr. -. -----, Vice Principal, ----- High School.

APPENDIX E

Table E-1: List of Organized Sports Reported

List of Popular and Less Popular Sports

List of Contact and Non-Contact Sports

List of Team and Individual Sports

Table E-1

List of Organized Sports Reported

Sport ^a	Number of Participants		
	Females	Males	Total
Baseball	57	96	154 ^b
Soccer	43	54	97
Basketball	42	51	93
Hockey	14	71	85
Volleyball	47	20	67
Track & Field	26	19	45
Football ^c	2	34	36
Swimming	24	7	31
Rugby	5	18	23
Cross Country	10	3	13
Field Hockey	11	1	13 ^b
Equestrian	10	1	11
Golf	0	11	11
Figure Skating	8	1	9
Rowing	5	4	9
Ringette	6	1 ^d	7
Wrestling	1	6	7
Tennis	3	4	7
Gymnastics	6	0	6
Judo/Karate	2	3	5
Skiing	0	5	5
Softball	2	2	4
Weightlifting	0	4	4
Badminton	1	2	3
Bowling	0	3	3
Biking/Cycling	1	2	3
Curling	2	0	2
Sailing	1	1	2
Broomball	1	0	1
Speedskating	0	1	1
Boxing	0	1	1
Water-Skiing	0	1	1

^aSports are listed in order of reported frequency of participation.

^bTotal reflects one subject who did not record gender.

^cCategory includes two female touch/flag football participants.

^dQuestionable entry, ringette is a female-only sport. Remainder of subject's response protocol reviewed for authenticity before inclusion in study.

POPULAR VS. LESS POPULAR SPORTS
(IN ORDER OF FREQUENCY)

MALESPOPULAR

Baseball
Basketball
Soccer
Hockey
Football

LESS POPULAR

Athletics^a
Volleyball
Rugby
Swimming
Golf
Wrestling
Skiing
Rowing
Tennis
Weightlifting
Bowling
Judo/Karate
Badminton
Biking/Cycling
Softball
Boxing
Equestrian
Field Hockey
Figure Skating
Sailing
Speedskating
Water-Skiing

FEMALESPOPULAR

Baseball
Volleyball
Soccer
Basketball
Athletics^a

LESS POPULAR

Swimming
Hockey
Field Hockey
Equestrian
Figure Skating
Gymnastics
Ringette
Rowing
Rugby
Tennis
Curling
Football
Judo/Karate
Softball
Badminton
Biking/Cycling
Broomball
Sailing
Wrestling

^aTrack & Field plus Cross Country

CONTACT VS. NON-CONTACT SPORTS
(IN ORDER OF FREQUENCY)

MALESCONTACT

Hockey
Soccer
Basketball
Football
Rugby
Wrestling
Boxing
Judo/Karate
Field Hockey

NON-CONTACT

Baseball
Volleyball
Track & Field
Golf
Swimming
Skiing
Rowing
Tennis
Weightlifting
Bowling
Cross-Country
Badminton
Biking/Cycling
Softball
Equestrian
Figure Skating
Sailing
Speedskating
Water-Skiing

FEMALESCONTACT

Soccer
Basketball
Hockey
Field Hockey
Ringette
Rugby
Judo/Karate
Wrestling

NON-CONTACT

Baseball
Volleyball
Track & Field
Swimming
Cross Country
Equestrian
Figure Skating
Gymnastics
Rowing
Tennis
Curling
Football (Touch)
Softball
Badminton
Biking/Cycling
Broomball
Sailing

TEAM VS. INDIVIDUAL SPORTS
(IN ORDER OF FREQUENCY)

MALESTEAM

Baseball
Hockey
Soccer
Basketball
Football
Volleyball
Rugby
Softball
Field Hockey

INDIVIDUAL

Track & Field
Golf
Swimming
Wrestling
Skiing
Rowing
Tennis
Weightlifting
Bowling
Cross-Country
Judo/Karate
Badminton
Biking/Cycling
Boxing
Equestrian
Figure Skating
Sailing
Speedskating
Water-Skiing

FEMALESTEAM

Baseball
Volleyball
Soccer
Basketball
Hockey
Field Hockey
Football (Touch)
Ringette
Rugby
Softball
Broomball

INDIVIDUAL

Track & Field
Swimming
Cross-Country
Equestrian
Figure Skating
Gymnastics
Rowing
Tennis
Curling
Judo/Karate
Badminton
Biking/Cycling
Sailing
Wrestling

APPENDIX F

List of Current Physical Activities

CURRENT PHYSICAL ACTIVITIES
(IN ORDER OF FREQUENCY)

<u>ACTIVITY</u>	<u>NUMBER OF RESPONSES</u>
1. Walking/Walking dog	617
2. Working out	372
3. Running/Jogging	167
4. Biking	165
5. Baseball	124
6. Basketball	118
7. Skating/Hockey	71
8. Swimming	70
9. Working	68
10. Soccer	67
11. Dancing	60
12. Rugby	39
13. Volleyball	38
14. Rowing	32
15. Bowling	31
16. Horseback riding	28
17. Cheerleading	27
18. Tennis	22
19. Gymnastics	21
20. Skateboarding/Roller-blading	18
21. Hackysack	15
22. Road Hockey	13
23. Wrestling/Boxing	13
24. Badminton	10
25. Snowboarding/Tobogganing/Sledding	9
26. Skiing	9
27. Karate	8
28. Fishing	8
29. Target shooting	7
30. Football	5
31. Golf	4
32. Hunting	3
33. Hiking	2
34. Theatre work	1
TOTAL	= 2262 (338 respondents)

APPENDIX G

List of Leisure Time Activities

..

Table G-1

Leisure Time Pursuits

I. Passive Leisure Pursuits

<u>Activity</u>	<u>Frequency</u>
Watching TV/Videos	187
Being with friends	<u>279</u>
- Going to shopping mall with friends	37
- Hanging around with friends/Being with friends	191
- Go to parties	44
- Friend's house (at?)	7
Talking on telephone	46
Listening to music	159
Shopping	<u>23</u>
- Shopping	<u>21</u>
- Spend money	2
Spend time with girlfriend/boyfriend	36
Relax at home/Relaxing	10
Spectating sport events	6
Go to movies	28
Spend time with family	13
Potentially addictive/negative behaviours	<u>27</u>
- Drugs/Alcohol	<u>22</u>
- Have a smoke	4
- Steal	1
Restaurants/Coffee shops/Bars/Clubs	<u>17</u>
- Go to bars	<u>7</u>
- Going to restaurants	1
- Go to favourite hangouts/clubs	4
- Sit in coffee shops	5

Table G-1

Leisure Time Pursuits (continued)**I. Passive Leisure Pursuits (continued)**

<u>Activity</u>	<u>Frequency</u>
Sleep	8
Unstructured	<u>10</u>
- Go out	6
- Have fun/Have good time	4

II. Passive But Cerebral/Creative Leisure Pursuits

<u>Activity</u>	<u>Frequency</u>
Reading	116
Games	<u>34</u>
- Computer games/Other games	29
- Arcade	2
- Play cards	3
Using computer/typing	9
Homework/Studying	14
Helping friends with problems	2
Write/Writing letters (pen pals)	25
Church/Religion	5
Practice DJ skills	1
Meditation	2
Enter contests	1
Thinking	4

Table G-1

Leisure Time Pursuits (continued)**III. Cerebral/Creative & Somewhat Active Leisure Pursuits**

<u>Activity</u>	<u>Frequency</u>
Drama/Music/Fashion/Art	<u>71</u>
- Singing/Acting/Playing a musical instr.	44
- Modelling (fashion)	1
- Draw/paint	19
- Do make-up/hair	2
- Lessons: music, swimming, horse-back riding	5
Hobbies	<u>47</u>
- Crafts/Woodworking/Ceramics/Needlework/Artwork	20
- Play pool	7
- Collect cards/minatures/stamps	7
- Cook/Bake	7
- Play darts	1
- Build models/Building things	5
Clubs/Groups	<u>35</u>
- Weight club	3
- Clubs/Youth Groups (Pathfinders)	14
- Student Council/Leadership/Yearbook editor	6
- "Reach for the Top" school quiz team member	2
- School band/choir/Church choir	7
- Dance clubs	3
Teach: Sunday Sch., Canoeing, Outdoor Act, Music	7
Like to keep busy	2
Travel	<u>4</u>
- Travel	3
- Exploring new places	1
Mechanized Vehicles	<u>20</u>
- Riding Dirtbike	9
- Driving/Cruising/Driving lessons	4
- Snowmobiling	4
- Four-wheelers	3

Table G-1

Leisure Time Pursuits (continued)

**III. Cerebral/Creative & Somewhat Active Leisure Pursuits
(continued)**

<u>Activity</u>	<u>Frequency</u>
Playing with dog/Spend time with my animals	5

IV. Active Leisure Pursuits

<u>Activity</u>	<u>Frequency</u>
Mechanical/Electronic	<u>13</u>
- Working on cars	5
- Working on dirtbike	5
- Electronics	3
Physical Activities	<u>316</u>
- Outdoor activities	100
- Non-organized sports	121
- Skate - roller, ice, boarding	7
- Biking	22
- Dancing - jazz, highland	15
- Play road hockey	6
- Workout at gym/fitness centre	30
- Referee various sports	2
- Horse shows/competitions	1
- Practising skills for sports involved in	12
Work	<u>40</u>
- Clean house	5
- Work/Babysitting/Farmwork	23
- Yard work	2
- Volunteer work	10
Sexual Activities	4

TOTAL NUMBER OF RESPONSES = 1626

APPENDIX H

Table H-1: Correlation Matrix - Main ANCOVA Variables

Table H-2: Printout of ANCOVA Table for Total Sample -
General Sport Participation

Table H-3: Printout of ANCOVA Table for Total Sample -
Varsity Sport Participation

Table H-4: Printout of ANCOVA Table for Total Sample - PTC
Sport Participation

Table H-5: Printout of ANCOVA Table for Athletes Only (4
Schools)

Table H-1

Zero Order, Pairwise Correlation Matrix: Main ANCOVA Variables

	Overall Delinquency	Social Desirability	Participation Org. Sport	Participation Var. Sport	Gender	Age ^a	School ^b	3 Aspects of Sport ^c	Level of Instruction	Job
Overall Delinquency	---	-.2911*** (N = 552)	.1139** (N = 580)	-.0163ns (N = 582)	.3012*** (N = 579)	.1458* (N = 576)	.1112*** (N = 582)	.1902*** (N = 582)	.1716*** (N = 582)	.0875* (N = 579)
Social Desirability		---	-.0657ns (N = 557)	-.0514ns (N = 559)	-.0945* (N = 557)	.0086ns (N = 552)	.0009ns (N = 559)	-.0762ns (N = 559)	-.0137ns (N = 559)	.0126ns (N = 557)
Participation Org. Sport			---	.2745*** (N = 587)	.1941*** (N = 584)	.0303ns (N = 587)	.0218ns (N = 582)	.0009ns (N = 559)	-.0931* (N = 587)	.1274** (N = 559)
Participation Var. Sport				---	---	.0303ns (N = 587)	.0218ns (N = 582)	.2570*** (N = 590)	-.0931* (N = 587)	.1274** (N = 559)
Gender					---	---	---	.1798*** (N = 587)	.1366*** (N = 587)	.0391ns (N = 585)
Age ^b						---	---	-.0576ns (N = 582)	.0230ns (N = 590)	-.0233ns (N = 587)
School ^c							---	---	---	---
3 Aspects of Sport ^d								---	---	---
Level of Instruction									---	---
Job										---
Phys. Act. Intensity ^d										---

* $p < .05$; ** $p < .01$; *** $p < .001$.^aTwo level variable: 1) ages 14 and 15; 2) ages 16, 17, 18 and 19.^bTwo level variable: 1) rural schools; 2) urban schools.^cTeam, contact and popular sports.^dTwo level variable : 1) light or moderate; 2) heavy.

Table H-2

ANCOVA Table - Total Sample - General Sport Participation

DBOVERAL - overall del. beh. in last year only
 by SPORPART - sport participation
 GENDER
 AGE - 2 levels
 SCHOOL - Rural/Urban
 LEVEL - general level of instruction vs. everything else
 JOB - employment
 with SOCDESIR - social desir./response style

EXPERIMENTAL sums of squares
 Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariates					
SOCDESIR	9706.525	1	9706.525	56.706	.000
Main Effects	14130.387	6	2355.064	13.689	.00
SPORPART	772.906	1	772.906	4.493	.035
GENDER	6453.069	1	6453.069	37.510	.000
AGE	1326.306	1	1326.306	7.709	.006
SCHOOL	883.656	1	883.656	5.136	.024
LEVEL	1570.480	1	1570.480	9.129	.003
JOB	257.346	1	257.346	1.496	.222
2-Way Interactions	3546.851	15	236.457	1.374	.155
3-Way Interactions	4009.248	20	200.462	1.165	.280
Explained	31393.011	42	747.453	4.345	.000
Residual	85846.657	499	172.037		
Total	117239.668	541	216.709		

Multiple $R = .468$. Multiple $R^2 = .219$.

Table H-3

ANCOVA Table - Total Sample - Varsity Sport Participation

DBOVERAL - overall del. beh. in last year only
 by VARSITY - non-part., vars. only, comm. only, mixed
 GENDER
 AGE - 2 levels
 SCHOOL - Rural/Urban
 LEVEL - general level of instruction vs. everything else
 JOB - employment
 with SOCDESIR - social desir./response style

EXPERIMENTAL sums of squares
 Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariates					
SOCDESIR	9942.584	1	9942.584	56.929	.000
Main Effects	14381.820	8	1797.727	10.293	.00
VARSITY	1113.346	3	371.115	2.125	.096
GENDER	6204.874	1	6204.874	35.528	.000
AGE	1146.393	1	1146.393	6.564	.011
SCHOOL	756.930	1	756.930	4.334	.038
LEVEL	1767.115	1	1767.115	10.118	.002
JOB	246.062	1	246.062	1.409	.236
Explained	24324.404	9	2702.712	15.475	.00
Residual	92214.758	528	174.649		
Total	116539.162	537	217.019		

Multiple $R = .457$. Multiple $R^2 = .209$.

Higher order interactions have been suppressed.

Table H-4

ANCOVA Table - Total Sample - Popular, Team, Contact Sport Participation

DBOVERAL - overall del. beh. in last year only
 by PTC - exclusive participation in popular and/or team and/or contact sports
 GENDER
 AGE - 2 levels
 SCHOOL - Rural/Urban
 LEVEL - general level of instruction vs. everything else
 JOB - employment
 with SOCDESIR - social desir./response style

EXPERIMENTAL sums of squares
 Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariates					
SOCDESIR	9706.525	1	9706.525	57.669	.000
Main Effects	15943.792	6	2657.299	15.788	.00
PTC	2586.311	1	2586.311	15.366	.000
GENDER	6173.860	1	6173.860	36.680	.000
AGE	1414.458	1	1414.458	8.404	.004
SCHOOL	923.498	1	923.498	5.487	.020
LEVEL	1381.880	1	1381.880	8.210	.004
JOB	293.288	1	293.288	1.742	.187
2-Way Interactions	3806.055	15	253.737	1.508	.098
3-Way Interactions	3793.975	20	189.699	1.127	.317
Explained	33250.347	42	791.675	4.704	.000
Residual	83989.321	499	168.315		
Total	117239.668	541	216.709		

Multiple $R = .468$. Multiple $R^2 = .219$.

Table H-5

ANCOVA Table - Sport Participants Only (4 Schools)

DBATHLETES - del. beh. - sprt. parts. only (m+f)
 by PTC
 GENDER
 AGE
 RURAL/URBAN
 LEVEL
 JOB
 with SOCDESIR

EXPERIMENTAL sums of squares
 Covariates entered FIRST

<u>Source of Variation</u>	<u>Sum of Squares</u>	<u>DF</u>	<u>Mean Square</u>	<u>F</u>	<u>Sig of F</u>
Covariates SOCDESIR	6688.438	1	6688.438	32.184	.000
Main Effects	9262.726	6	1543.788	7.429	.000
PTC	1745.028	1	1745.028	8.397	.004
GENDER	3567.005	1	3567.005	17.164	.000
AGE	1201.106	1	1201.106	5.780	.017
RURAL/URBAN	189.967	1	189.967	.914	.340
LEVEL	575.535	1	575.535	2.769	.097
JOB	54.284	1	54.284	.261	.610
2-Way Interaction	3781.880	15	252.125	1.213	.262
3-Way Interaction	4032.516	20	201.626	.970	.499
Explained	23765.561	42	565.847	2.723	.000
Residual	51123.318	246	207.818		
Total	74888.879	288	260.031		

Multiple $R = .462$. Multiple $R^2 = .213$.