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Sensation Seeking Among High- and Low-Risk Sports Participants

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requirements for the degree of Master of Arts in
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ABSTRACT

The purpose of the present study was to investigate the sensation seeking tendencies of select New Zealand athletes. A "sensation seeker" is thought to be a person who needs varied, complex, novel, and intense forms of stimulation and experience and who is thought to be capable of taking physical and social risks for such experiences (Zuckerman, 1994). According to Marvin Zuckerman (1994), 'Sensation Seeking' is integrated within a broader trait called Impulsive-Sensation Seeking (ImpSS). That is, the personality dimensions of 'impulsiveness' and 'sensation seeking' are thought to be interconnected. The main aim of the present study was to assess empirical support for Zuckerman's (1994) ImpSS theory and associated hypotheses, and to replicate and extend previous research findings in this area using high- and low-risk sport participants. The Sensation Seeking Scale-V (Zuckerman, Eysenck & Eysenck, 1978), the Impulsiveness Scale of the Impulsiveness-Ventureous-Empathy Scale (Eysenck & Eysenck, 1978), and a life span questionnaire of sports participation were administered to both male ($n = 119$), and female ($n = 47$) athletes currently engaged in one of eight sport disciplines - Hang-gliding; Mountaineering; Sky-diving; Automobile racing; Swimming; Marathon running; Aerobics; and Golf. Results provided support for the main hypothesis of Zuckerman's ImpSS theory -- (a) that sensation seeking is integrated within a broader trait called Impulsive-Sensation Seeking; and (b) that total sensation seeking can differentiate between high- and low-risk sport participants. Results provided a mixed level support for some more specific hypotheses derived from Zuckerman's ImpSS theory. Findings are discussed with respect to Zuckerman's (1994) Impulsive-Sensation Seeking model. Limitations of the present study and suggestions for future research are also discussed.

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*"Tell me what you play,
and I'll tell you who you are".*

'Roger Caillois'

TABLE OF CONTENTS

| | PAGE |
|---|-------------|
| Abstract | ii |
| Acknowledgements | iii |
| Table of Contents | iv |
| List of Tables | vi |
| List of Figures | viii |
| | |
| 1 INTRODUCTION | 1 |
| Defining Personality: General Overview | 1 |
| Sports and Personality | 3 |
| Methodological Considerations and Theory Revision | 11 |
| | |
| 2 SENSATION SEEKING | 14 |
| A Working Definition | 14 |
| Theory Development | 14 |
| Marvin Zuckerman's Conceptualization of Sensation Seeking | 18 |
| Sensation Seeking Research | 23 |
| | |
| AN OVERVIEW OF A NEW THEORETICAL MODEL | 30 |
| Research Relating Sensation Seeking to Sports | 33 |
| | |
| 3 THE PRESENT STUDY | 42 |
| Rationale and Goals of the Study | 42 |
| The Hypotheses | 42 |
| Main Hypotheses | 42 |
| Specific Hypotheses | 43 |
| | |
| 4 METHODOLOGY | 48 |
| | |
| PARTICIPANTS | 48 |
| | |
| MEASURES | 53 |
| The Sensation Seeking Scale (Form V) | 53 |
| Impulsiveness-Venturesomeness-Empathy Scale | 55 |
| High-Risk Sport Classification and Childhood Experience | |
| Survey and Past and Present Sport Involvement | 55 |
| The Complete Research Questionnaire Battery | 56 |
| | |
| PROCEDURE | 57 |

| | | |
|--------------------|---|-----------|
| 5 | RESULTS | 60 |
| | DESCRIPTIVE ANALYSES | 60 |
| | THE HYPOTHESES | 63 |
| | Main Hypothesis 1 | 63 |
| | Main Hypothesis 2 (and Specific Hypotheses 1 & 2) | 63 |
| | Comparisons between sport groups | 64 |
| | High-risk sports | 66 |
| | Low-risk sports | 67 |
| | The eight sporting activities | 67 |
| | Specific Hypothesis 3 | 69 |
| | Specific Hypothesis 4 | 70 |
| | Specific Hypothesis 5 | 71 |
| | Specific Hypothesis 6 | 73 |
| | Specific Hypothesis 7 | 75 |
| | Specific Hypothesis 8 | 75 |
| | Specific Hypothesis 9 | 79 |
| | Specific Hypothesis 10 | 81 |
| | SUPPLEMENTARY ANALYSES | 82 |
| 6 | DISCUSSION | 84 |
| | SUMMARY OF MAJOR FINDINGS | 84 |
| | SUMMARY OF FINDINGS RELATED TO SPECIFIC HYPOTHESES | 88 |
| | RECOMMENDATIONS | 94 |
| | Limitations of Present Study | 94 |
| | Suggestions for Future Research | 97 |
| | Motivational Factors | 97 |
| | The Sensation Seeking Scale (Form VI) | 97 |
| | Childhood Experiences | 98 |
| | REFERENCES | 99 |
| APPENDIX A: | Information Sheet | 111 |
| APPENDIX B: | The Research Questionnaire | 112 |
| APPENDIX C: | Characteristics of High-Risk Sports According to High and Low Sensation Seekers | 126 |

List of Tables

| Table | Page |
|--|------|
| 1. Models for the possible relationship of personality to involvement in sport and physical activity. | 4 |
| 2. Research relating sensation seeking to sports. | 35 |
| 3. Sample characteristics: Comparing high and low risk groups with sample as a whole. | 49 |
| 4. Sample characters for individual sport groups. | 50 |
| 5. Sport level distributions. | 52 |
| 6. Alpha reliabilities of the three IMP scales for men and women. | 55 |
| 7. Classification of high and low sensation seekers according to sport. | 59 |
| 8. Mean and Standard Deviation scores of males and females on the SS scales by age group. | 61 |
| 9. Means, standard deviations, and t-values for risk categories on the SS scales and Imp. | 64 |
| 10. Means, standard deviations and univariate F-values for individual sport categories on the SS scales and Imp. | 65 |
| 11. Means and standard deviations by sport level on the SS scales and Imp. | 70 |
| 12. Correlations between the sensation seeking scale and impulsiveness. | 71 |
| 13. Sport risk appraisal by high and low sensation seekers as a function of sport risk category. | 72 |
| 14. The ten most frequently reported high-risk sport characteristics by high sensation seekers. | 74 |
| 15. Correlations between number of activities tried and sensation seeking scales for males and females. | 76 |

| | | |
|-----|--|----|
| 16. | Correlations between number of new activities like to be tried and the sensation seeking scales for males and females. | 77 |
| 17. | Correlations between number of new activities not like to be tried and the sensation seeking scales for males and females. | 78 |
| 18. | Parental adventurousness ratings. | 80 |
| 19. | Parental protectiveness ratings. | 80 |
| 20. | Socioeconomic status of the high and low risk sport groups. | 82 |
| 21. | Sport participation reasons according to high- and low-risk sport participants. | 83 |
| 22. | Summary of findings. | 91 |

List of Figures

| Figure | | Page |
|--------|---|------|
| 1. | Changes in Total Sensation Seeking as a Function of Age | 62 |

Chapter 1

INTRODUCTIONDefining Personality: General Overview

Human beings are both unique and similar; they possess a combination of physical, mental, and behavioral characteristics that identify them as human and endow them with an individual 'personality' (Aiken, 1993, 1996). However - what exactly is meant by the term "personality?". For the lay person, personality is often defined in terms of social attractiveness, a person's perceived ability to get along well with other people. For example, some may say that Angela has a "great" personality; or Henry has "no personality" (Ryckman, 1993).

On the other hand, those in the social scientific community do not always agree on a singular answer to this question (Burger, 1993). Defining personality appears to depend on one's theoretical perspective. The following definitions highlight the wide array of perspectives proposed by various personality theorists:

"... that which permits a prediction of what a person will do in a given situation". (Cattell, 1950, p.2).

"... a system of relatively enduring dispositions to experience, discriminate, or manipulate actual or perceived aspects of the individual's environment (including himself)". (Bronfenbrenner, 1951, p.158).

"... the relatively enduring pattern of recurrent interpersonal situations which characterize a human life". (Sullivan, 1953, p. 11).

"... a person's unique pattern of traits". (Guilford, 1959, p.5).

"...the dynamic organization within the individual of those psychophysical systems that determine his characteristic behaviour and thought." (Allport, 1961, p.28).

" ... the more or less stable and enduring organization of a person's character, temperament, intellect, and physique, which determines his unique adjustment to the environment". (Eysenck, 1970, p.2).

Despite a plethora of definitions, personality theorists generally agree that personality is an organized construct, albeit complex, that includes the person's unique composite of inborn and acquired mental abilities, attitudes, temperaments and other individual differences. This organized and integrated collection of cognitive, affective, and behavioral characteristics, as it exists for a particular individual, predisposes his or her responses to certain stimuli in the environment (Aiken, 1993; Rychman, 1993). In addition, most theorists agree that a theory of personality should be able to accommodate both commonalities and uniqueness across individuals (Fehr, 1983). Typically, recent reviews of personality theory (e.g., Aiken, 1993; Burger, 1993; Pervin, 1993), have concluded that personality refers to characteristics, originating from an individual, that account for consistent patterns of behaviour.

Given a commonly agreed upon working definition, the study of personality then can become more rigorously articulated and scientifically analysed. Personality psychologists recognize and acknowledge the importance of the fact that all people are similar in some ways. A primary focus of interest in this discipline is also to provide explanations, supported by empirical evidence, for each individual's unique ways of responding to his or her environment. Simply stated, they are concerned with the ways in which people's predispositional tendencies are similar and different (Aiken, 1993; Pervin, 1993; Rychman, 1993). Within sport, theory and research has begun to examine a role for personality factors that account for similarities and differences between sport participants.

Sports and Personality

As articulated earlier, the interest in why individuals are consistently predisposed to behave as they do has had a lengthy history in psychology. One collective pattern of human behaviour is a pursuit of pleasurable activities. As a pleasurable pursuit, sporting activities have had a long history of their own. Up to the 15th century, the term 'sport' simply denoted a pleasant pastime or diversion. By the 16th century, however, sports denoted competitive athletic contests. Gradually, the term 'sport' has gained wider application. That is, 'sport' now encompasses a wide variety of activities that may be indulged in for either competition or recreational pleasure, such as mountaineering, swimming, motor-racing, running, parachuting, competitive team sports and so forth (Cuddon, 1979).

Historically, one of the most popular issues in sport psychology concerns the question of whether or not there is a relationship between personality factors (i.e., predispositional tendencies), and participation in various sports (Carron, 1980; Vealey, 1992). The extent to which personality and sports participation are related, however, is not straight forward. Morgan (1980) identifies two opposing positions:

"There are basically two personology camps in contemporary sport psychology, and the members of those two camps espouse either a credulous or a sceptical viewpoint concerning the prediction of athletic success from psychological data. The credulous psychologist would lead us to believe that psychological data are extremely useful in predicting success, whereas the sceptical would argue that psychological data are of little or no value whatsoever" (P.330).

Between these poles, various theoretical positions have been articulated. Kroll (1970) listed five hypotheses which comprise various relationships between sport participation and personality (see Table 1).

Table 1. Models for the possible relationship of personality to involvement in sport and physical activity.

| MODEL | DESCRIPTION |
|---|--|
| Common Preliminary Core | Those individuals with specific personality traits select and participate in specific sports. An example of a popular stereotype reflecting this alternative is extroverts selecting team sports with introverts showing a preference for individual sports. |
| Modification and Attrition | No common personality characteristics initially but through a "survival of the fittest" process, only those individuals with suitable characteristics persist. In this alternative, sport beginners then would be dissimilar in personality profiles, and elite participants, similar. |
| Common Initial Interests/ Dissimilar Final Interests | There is a common personality pattern among beginners but through participation and attrition, elite athletes possess dissimilar personality characteristics. A situation which highlights this alternative is where all beginner karate participants might show high aggressiveness, a characteristics which is neither uniformly present nor absent in elite participants. |
| Neophytes Opposite to Elite | Elite athletes in a sport possess personality traits which are completely opposite to rookies. Kroll here takes into account the possibility that performance can result in dramatic changes in personality characteristics of an individual. A situation which reflects this alternative is when athletes attracted to a particular sport are introverted, |

but because of the specific task demands or performance requirements of that sport (e.g., high teamwork and interaction), all elite participants would come to reflect the same trait of extraversion.

| | |
|-----------------|--|
| No Relationship | Personality is unrelated to involvement in sport participation at any level. |
|-----------------|--|

Note. From Kroll (1970) Current strategies and problems in personality assessment of athletes. In L.E. Smith (Ed.), Psychology of motor learning. Athletic Institute.

Within these various models, research has looked at the relationship between sport participation and personality. Specifically, three major hypotheses have been explored: (1) Athletes differ from non-athletes along unique and identifiable personality dimensions; (2) athletes in one sport differ from athletes in another sport; and (3) elite and non-elite athletes differ. Research focusing on these three primary areas have also provided varying levels of support for the models listed in Table 1 and are highlighted below.

Regarding the hypotheses that athletes differ from non-athletes, Kroll (1970) hypothesised that athletes possess unique and definable personality attributes different from non-athletes. Sack, (1975; cited Eysenck, Nias & Cox, 1982) found weak support for this idea. He found a small but significant contribution of personality factors differentiating between athletes from non-athletes, accounting for around 7% of the total variance. Schurr, Asley and Joy (1977) found that athletes tended to exhibited less abstract reasoning ability compared to non-athletes.

Morgan (1980b) reviewed 15 studies that addressed the question of personality differences between athletes and non-athletes. Although some tentative differences were found, no meaningful conclusions could be drawn. Despite such lack of strong support, more robust differences between athletes and non-athletes have been more recently noted. Notably, Eysenck, Nias and Cox (1982) in their comprehensive review of the area, concluded that sport participants differ from non-sport participants by being more

extroverted, and by having lower scores on Neuroticism and higher on Psychoticism. That is, sport participants are thought to be sociable, impulsive, and outgoing individuals, but who generally lack empathy and concern for the rights and welfare of other people and tend to have lower emotional reactions to situations (e.g., anxiety) compared to non-athletes.

Other research has explored whether athletes in a given sport can be distinguished from athletes in other sports (Kroll, 1970). Many attempts have been made at assessing personality differences across different sports participants. However, in general, support for differences is mixed -- the most support for differences appears to be a function of team versus individual participation. Some illustrative findings are now briefly reviewed.

Administering the 16PF to 358 nationally ranked sportsmen, Kroll et al., (1978) found significant differences in personality among nationally ranked sportsmen in different sport disciplines. Surprisingly, however, Kroll et al., (1978) did not state what these differences were.

Cattell, Eber, and Tatzucka (1970) found that the swimmers and football players differed on personality factors. Football players were found to exhibit lower intelligence, and higher levels of tough-mindedness, practical concerns, and group adherence. Dowd and Innes (1981) found significant differences between squash and volleyball players. For example, the volley ball players were found to be less anxious and more forthright than the squash players. On the other hand, other studies have found no differences. For example, Sage (1976) found no significant personality differences between athletes in eight different sports - football, basketball, baseball, wrestling, gymnastics, swimming, track, and tennis.

Most of the studies designed to detect differences between sports participants have assessed team versus individual participation. Booth (1958) found extraversion to be more common in team than in individual sports. Similarly, Peterson et al., (1967) found that Cattell's factor of self-sufficiency - a subfactor of introversion - was more

evident in persons who engaged in individual versus team sports.

Schurr, Ashley and Joy (1977) found some clear relationships between personality and sports. They concluded that specific personality types can be shown to cluster in particular sports. For example, it was found that athletes participating in team sports (basketball, football, baseball, volleyball, soccer) were more anxious, dependent, less sensitive-imaginative, and showed greater ego-strength. They also tended to be more extroverted, while individual sport participants (track, wrestling, swimming, cross-country, golf, gymnastics, tennis), were found to be less anxious, more independent and objective.

To make further comparison between sport participants, Schurr et al., (1977) classified subjects into either 'direct' or 'parallel' sports. That is, sports which involved direct aggression against one's opponent (football, basketball, soccer and wrestling), were classified as Direct Sports. The remaining sports (golf, track, volleyball, baseball, tennis, swimming, gymnastics and cross country) were classified as Parallel (i.e., sports which involved no direct aggression against one's opponent). With sports classified as either direct or parallel, results suggested that direct sport participants were more independent, extroverted, objective, and tended to exhibit less ego-strength, while parallel sport participants were less anxious, independent and had greater ego-strength.

Findings also indicated that team-direct sport participants (i.e., basketball, football, soccer) were the most extroverted grouping and were additionally more extroverted than the non-athletes. Team-parallel sport participants (i.e., volleyball, baseball), exhibited the most dependence and ego-strength and also scored higher than non-athletes on both these characteristics. Individual-direct sport participants (i.e., wrestling) exhibited more objectivity and independence than non-athletes, while Individual-parallel participants (i.e., golf, tennis, track, swimming), showed less anxiety.

Apart from differentiation among athletes across different sports, investigators have also attempted to distinguish between elite and non-elite athletes within a given sport. Findings in this area have also afforded some general conclusions. For example, traits frequently found in the personality profiles of high level competitors, as compared with lower level competitors are greater levels of self-control, conscientiousness, intelligence, achievement, and extraversion. Such findings have been confirmed using different samples of elite athletes: with members of the U.S Olympic team (Peterson et al., 1967; Warbuton & Kane, 1966); elite swimmers (Ogilvie, 1968; Balazs & Nickerson, 1976); wrestlers (Kroll, 1967), hockey players (Bird, 1970) and elite distance runners (Morgan & Costill, 1972; Morgan & Pollock, 1977; Nagle, Morgan, Hellickson, Serfass, & Alexander, 1975).

Morgan and his associates (Morgan, 1980; Morgan and Johnson, 1977, 1978; Morgan and Pollock, 1977) investigated elite (world class), male athletes such as rowers, oarsmen, and distance runners. Findings demonstrated a remarkable amount of similarity across elite participants. For example, elite male athletes were found to be less anxious than their subelite counterparts. Following their investigation, Cattell et al., (1970) found that Olympic athletes showed higher ego-strength, dominance, low superego, an adventurous temperament, low proneness to guilt feelings and little sense of inadequacy, as compared with football players and swimmers.. These athletes were also found to be higher in extraversion, "cortertia" (i.e., tough-poise), and independence, and lower in anxiety. These Olympic athletes appear to be individuals who were outgoing, high in self-confidence and self-esteem, and who preferred to participate in individual sports.

Dowd and Innes (1981), utilizing the 16PF, studied 93 volley ball and squash players and compared scores of those ranked in the top 15 with those who were playing at a lower standard. Findings indicated that the better players had higher scores on measures of intelligence, experimentation, conscientiousness, and reduced scores on measures of anxiety and self-control.

Hypothesizing about this phenomenon, Silva (1984) provided an 'explanation' for the elite sport participants similarities in personality dispositions. Silva's hypotheses reflects Kroll's (1970) 'modification and attraction' typology (see Table 1). As the prospective elite athlete moves up the "athletic pyramid", athletic participants become more alike in their personality and psychological traits. At the base or entrance level of sport, athletes are very heterogeneous or have different personalities. However, through a process of "natural selection", certain personality traits will enhance an athletes likelihood of advancing to a higher level, while other personality traits will detract. At each higher level of the athletic personality pyramid, the athletes then become more alike or more homogeneous in their personality traits. When trying to differentiate between athletes of varying skill level in the middle and lower parts of the pyramid, the process of sorting will result in failure to find consistent differences. Elite athletes, however, will tend to exhibit similar profiles and will differ as a group from lesser-skilled groups. A study conducted by Rowland et al., (1986) supported this claim. They extended earlier descriptive studies of the construct 'sensation seeking' to demonstrate that sensation-seeking predicts not only choice of, but also degree of involvement in, various sports and physical activities. Sensation seeking will be addressed in more depth in Chapter two and three.

Unfortunately, frequent failure to replicate certain findings has led some researchers to conclude that there is no fundamental relationship between personality characteristics and level of sport participation (e.g., Singer, Harris, Kroll, Martens and Sechrest, 1977; Singer, 1969; Keogh, 1959). For example, using tennis and baseball players at varying levels of expertise, Singer (1969), found no relationship between levels of sport performance and personality characteristics. Davis and Mogk (1994) compared elite athletes, subelite athletes, recreational sport enthusiasts, and a non-athlete control group on a number of personality variable, including Sensation Seeking, Extroversion, Neuroticism, and Psychoticism. As with Singer's (1969) and Keogh (1959) findings, results provided no evidence that elite athletes could be distinguished from other groups on specific personality factors. Kane (1964) reported that introverts were as likely to be found as were extroverts among athletes at national and international levels.

One explanation put forward for the contradictory findings is that many studies fail to clearly report what criteria were used to identify high level sport performers (Ogilvie, 1968; Davis and Mogk (1994). For example, there are those who have chosen somewhat arbitrary criteria for selection (Robinson, 1885; Frazier, 1987). Some researchers have reserved the 'elite' classification for members of a national team (e.g., Miller & Miller, 1985), while still others have been more selective and included only Olympic competitors in this group (e.g., Silva, Shultz, Haslam, Martin, & Murray, 1985). As a result of this failure, results found across studies can not be directly compared or replicated by future investigators. In addition, just as there can often be considerable disagreement regarding how to classify or taxonomize personality, so too there appears to be disagreement about how to group expertise level of sports participants (Furnham, 1990).

Despite contradictory findings in the sport and personality literature reviewed in this section, some tentative conclusions can be drawn: (1) athletes may be differentiated from non-athletes on some personality attributes, for example, extraversion (Eysenck et al., 1982); (2) athletes in one sport may differ along some personality dimensions from athletes who participate in another sport. For example, team sport participants tend to be more extroverted (Booth, 1958), anxious and dependent (Schurr et al., 1977) whereas individual sport participants tend to be more introverted (Peterson et al., 1967), less anxious, and more independent (Schurr et al., 1977); (3) elite athletes may differ from subelite performers on some personality dimensions for example, anxiousness (Mogan & Johnson, 1977, 1978; Morgan, 1980; Dowd & Innes, 1981). Noting too, however, that there are some mixed findings in the area one must be aware of and consider methodological issues. Attention is now turned too relevant considerations.

Methodological Considerations and Theory Revision:

As alluded to earlier, a great deal of the research in the area of personality and sports has been plagued by problems related to theory and methodology (Morgan, 1980a, 1980b; Vealey, 1992). Some representative viewpoints are as follows:

"The few theories adopted by sport psychologists have tended to be bad theories. They have been bad in the sense that they were not intended for use in sport psychology" (Morgan, 1980b, p.72).

"... the research in this area has largely been of the 'shot gun' variety. By that I mean that investigators grabbed the nearest and most convenient personality test, and the closest sport group, and with little or no theoretical basis for their selection fired into the air to see what they could bring down." (Ryan, 1968; quoted in Martens, 1975).

"Many of the results reported are contradictory and difficult to interpret, particularly because of the small sample sizes often involved. There has been an alarming failure to consider the complexities of the topic, to allow for the weaknesses and deficiencies of many existing personality questionnaires, or to make distinctions which are absolutely crucial in this field, e.g., between outstanding and average practitioners or a given sport, or between different types of sports, such as individual versus group sports" (Eysenck, Nias & Cox, 1982; p.1).

In Morgan's (1980b) review of 15 studies assessing personality differences between athletes and non-athletes, he noted no consistency in the nature of the sample selected as well as great variability in the assessment procedures selected. Traditionally, most assessment instruments used to measure personality in sport research have been general and broad in nature (e.g., 16PF, EPI), rather than those used to test specific sport hypotheses or questions (e.g., 'Are there personality predictors that might be of use in promoting fitness and exercise adherence?'). In addition, some studies employed measures not designed for use with a normal population (e.g., MMPI).

Morgan (1978), commenting upon the Credulous-Sceptical debate, argued that the credulous and the sceptical perspectives are extreme, and neither one is scientifically viable. Morgan (1978) proposed that the credulous-sceptical argument in sport psychology stems from a variety of factors. Some of the more important being (1) an overall failure to adequately operationalize the dependent and independent variables, (2) atheoretical as apposed to theoretical inquiry, (3) use of first order factors alone in some investigations and higher order factors in others, and (4) a total disregard for consideration of self-reported response distortion (e.g., 'faking good'; 'faking bad').

It has been further suggested that some dimensions of personality (e.g., extroversion, neuroticism, and Psychoticism) are too broad to be applied to specific sporting or physical activities, or, alternatively, are mediated by a number of other sport specific personality and/or environmental factors. For example, the relation between extraversion and sports may be mediated by other factors including sensation seeking, assertiveness, competitiveness, impulsiveness, and high pain thresholds (Zuckerman, 1994; Eysenck & Zuckerman, 1978). If this is true, not all studies need to measure the main dimensions of personality; an investigator may instead study a particular theoretical concept (e.g., sensation seeking), that underlies a broader main personality dimension. For example, Zuckerman's (1979) concept of Sensation Seeking is said to be related to Eysenck's supertrait of Psychoticism (Zuckerman, 1994). Zuckerman (1979) has argued that narrow measures are more effective than broad assessment instruments in answering specific research questions.

Rushall (1975; cited Carron, 1980), suggested that if the studies with methodological and conceptual errors were removed, this would result in only a small number of studies remaining, and thus would not be sufficient to permit generalizations. In short, additional, more scientifically rigorous investigation is necessary. Morgan (1978) put forward the following recommendations for consideration for future research:

- (1) It may be necessary to construct sport-specific inventories for use in sport psychology.

- (2) The credulous-sceptical argument can best be regarded as a pseudo argument. It is time to set the argument aside and proceed with the task at hand - attempting to understand the psychological aspects of sport and physical activity.
- (3) It is recommended that response distortion (e.g., social desirability), irrespective of the paradigm or theory employed be addressed.
- (4) Aspiring sport psychologists should be trained in both a selected field of academic psychology as well as a sub-discipline (e.g., sport psychology or exercise physiology) within the exercise and sport sciences.

In addition to the above recommendations, it has been suggested that a necessary step in sport personality research is to look at more specific dimensions of sports participation (Zuckerman, 1994). For example, measuring Sensation Seeking might be more relevant for sports involving high levels of personal risk whereas assessing aggression might be more relevant for sports involving high levels of body-contact (Zuckerman, 1983). In methodological terms, this issue is really one of "biting off methodologically only as much as one can (theoretically) chew". In line with this view, attention is now turned to one of the more specific dimensions, Sensation Seeking, and an examination of its role in sport related personality research.