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**THE SENSATION SEEKING
LIFE HISTORY INTERVIEW**

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Senior Honors Thesis**

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A Pilot Study Using a Life History Interview to Assess Sensation Seeking.

Introduction

Sensation Seeking has been extensively studied since the 1970's when the concept was first formulated by M. Zuckerman. He defines Sensation Seeking (SS) as:

"A trait defined by the need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences.... The high sensation seeker is sensitive to his or her internal sensations and chooses external stimuli that maximize them... [these sensations are] produced by emotions, drugs, physical activities such as free-fall sky diving, scuba diving.... speed and movement beyond the ordinary range. 'Varied' reflects the need for change 'novel' means something unlike previous experiences 'risk' may be defined as the appraised likelihood of a negative outcome their tendency [is] to do things that lower sensation seekers regard as too risky" (Zuckerman, p.10-11).

This concept has generated extensive research covering many facets of SS; biological and biochemical aspects, personality correlates, and lifestyle correlates. In this paper we will concern ourselves mainly with personality and lifestyle correlates.

One of the most significant findings of the SS research has been its correlation with, and predictive ability of, drug use and abuse. SS has also been found to be highly correlated with Extraversion and

Psychoticism, with delinquency, and with low Lie scale scores; it is negatively correlated to Boredom.

Certain studies have indicated that it is possible to evaluate SS in individuals without recourse to a structured questionnaire such as Zuckerman's Sensation Seeking Scales (SS Scales). Such ability would be a useful asset for those involved with young populations; teachers, parents and others could assess those young people "at-risk" for drug and alcohol experimentation due to their high need for stimulation from the environment, and direct such youth into other satisfying arenas, such as summer camps with exciting programs, variety of sporting activities, experimentation with music--anything which would direct their energies and needs away from the boredom which is anathema to them. Vocational guidance could be used to indicate jobs that would satisfy them as adults.

To determine whether it is feasible to assess SS from a description and a simple questionnaire, research will be cited which indicates that SS is perceptible to those who are familiar with the concept. A review of the literature will confirm that SS is a robust phenomenon, valid across culture and gender, and that it does predict drug use and other negative behaviors. The literature will provide well researched material for a description of the trait of SS, and some of the ways this is manifested in the personality. We will then suggest a course of experiments which should eventually lead to the formation of a small, highly heuristic group of questions which would enable those dealing with children approaching adolescence to be able to select those youth likely to be "at-risk" for drug and alcohol experimentation due to their high need for

sensation stimulation from their environment. A study of the research would help determine those personality and behavioral correlates which could be most useful in the questionnaire.

How Can One Efficiently Assess SS in Conversation?

Rowland et al (1988) in "The perception of sensation seeking in familiar and unfamiliar others" found that for couples "rapid and accurate judgements of the sensation seeking trait in unfamiliar others are possible," and that people are also accurate in their estimations for those with whom they are familiar.

With this information in mind, this experimenter will formulate a "Life History Inventory" and administer it to a pre-selected group of individuals whose measure of SS is known to another experimenter. This experimenter will then make a determination of these subjects' sensation seeking and compare it to actual scores. If this technique is successful, it will confirm that it is possible to assess SS in unknown others with some accuracy without recourse to formal questionnaires. If this is true, then given a level of education and understanding of SS, it should be possible for concerned others assess whether an individual was likely to be a high or a low sensation seeker. This heuristic ability provides the rationale for providing those involved with pre-adolescents with a description of SS, and a short questionnaire (more of a checklist) which could be used to determine those who are possibly high in SS, and "at-risk" for consequent negative behaviors.

There also exists some independent evidence that administration of self-report questionnaires is not the most ideal method of assessing SS. Torrance and Ziller in 1957 designed a Risk

Scale Biographical Inventory (BI), and Himelstein and Thorne (1985) administered this scale and SS Scale to a group of 105 students. They found the correlations between the two sets of scales were positive and significant. The BI was in the form of a multiple choice questionnaire with four optional answers, and tapped into subjects' actual thrill seeking and stimulating experiences. This contrasts with SS Scale which is in forced-choice format, with items that tap into the preference and desire to engage in SS behavior rather than actual experience. It seems strongly possible that often the SS Scale is measuring desired behavior, rather than the actual experience of SS behaviors.

Cross-Cultural Studies

Since the 1970's when Zuckerman first introduced the concept of SS, research has been conducted in many different cultures-- Australia (Ball et al; Watson), Canada (Nelson et al; Rowland et al; Rowland & Franken; Satinder & Black), England (Eysenck et al; Golding et al), Holland (Kuiper & Feij), India (Krishna-Rao; Umpathy & Suvarna), Israel, (Hobfoll & Segal, Teichman et al), Norway (Pedersen et al), Poland (Oleszkiewicz-Zsurzs; Zaleski), Spain (Perez et al)--to name just a few. This extensive research indicates the robustness of the phenomenon, and its applicability to people in varied social and cultural settings.

In 1979 Zuckerman et al posited a 4-dimensional model which taps four behavioral aspects of SS personality; Thrill and Adventure, Experience, Disinhibition and Boredom. The first three factors have positive correlations to SS, the last negative. This model was used by Rowland & Franken in Canada and was found consistent with both

American findings, and those of Ball et al (1984) in Australia, i.e. the cross-sex and cross-cultural generality of Zuckerman's SS (as operationally defined by his four-dimensional model and measured on his Sensation Seeking Scale Form V).

Correlation with Drug Use and Prediction of Drug Use.

Pedersen (1989) found SS predicted legal and illegal drug use among adolescents in Norway (386). Goldring et al (1983) in England found significantly higher use of alcohol, tea and coffee, cannabis and other drug use (their "polydrug model") correlated with cigarette smoking among their sample of high sensation seeking college students (together with higher Psychoticism, and reduced Lie scale scores) (705). Teichman et al (1989) tested 1009 Israeli adolescents between 15 and 18 years old twice, a year apart, for drug and alcohol use. They found SS to be the most consistent predictor for substance abuse in this longitudinal study. Hobfoll & Segal (1983), also in Israel, found that drug use (and especially hard drug use) in adolescent males (12 to 18 y.o.) in a detention center was related to thrill and excitement. These authors also comment on the relationship between personality factors and delinquent behavior among their sample. Satinder & Black (1984) working in Canada found that cannabis users (undergraduates) scored highly on the SS Scales, and also on the Disinhibition subscale, supporting the link between drug use and SS, but also suggesting that cannabis use be related to social behavior, and the need for disinhibition (101).

A valuable study was conducted in Sweden (Cloninger et al., 1988) where 431 11-year-olds were rated on three dimensions of childhood personality--novelty-seeking, harm avoidance, and reward dependence. SS were tested again at age 27 for alcoholism. The study confirmed high novelty seeking and low harm avoidance were most predictive of later alcohol abuse.

A similar longitudinal study was conducted by Bates et al (1986) using 584 15 or 18 year-olds, who were retested three years later. The SS Scale was administered in both tests, and regression analyses used to correlate initial SS levels with alcohol and marijuana use at both ages, with significant results.

Some very comprehensive studies into SS and adolescent drug use were conducted in the U.S. Bry (1983) made a comprehensive overview of the risk factors predicting drug abuse, including high sensation seeking. She found that higher numbers of risk taking behaviors (rather than any single risk-taking factor) consistently predicts abuse--she comments on the shortcomings of many predictive models which do not take this aspect of the correlation into account.

Andrucci et al (1989) examined the relationship between SS Scales, the MMPI and adolescent drug experimentation over nine drug categories which found "significant relationships between personality measures and drug use...with consistently strong findings for the SSS" (SS Scales) (253). This last study is particularly relevant here as it was conducted over a younger population than those normally used (14 - 18 yrs) and examined the early stages of drug use which have received little attention to date.

Jaffe & Archer (1987) administered five different assessment measures (MMPI Psychopathic Deviancy Scale, MacAndrew Alcoholism Scale, the Alcohol Abuse and Drug Abuse Scales of the Millon Clinical Multiaxial Inventory, and Zuckerman's SS Scale) to assess drug use on twelve pharmacological categories. They found that the SS Scale had the largest discriminant function weight in 8

of their 12 categories, and concluded that SS was the main motive for drug use in their sample, and that it showed particular sensitivity in predicting the range of drug abuse patterns (251-252). Jaffe and Archer express the hope that "this study may serve as a link between epidemiological investigations of drug use in normal populations and ...literature on the relationship of personality measures to drug use in chronic...drug addicted samples."

One of the largest sample groups, and most comprehensive studies was carried out in the Netherlands by Kuiper & Feij (1983). These authors were addressing the issues of adolescent emotional crises with a view to showing that only a small portion of the adolescent population does go through crisis. They used a sample of 1100 schoolchildren ranging in age from 13 to 18. Where problems of adolescent crisis were found, they were found to correlate with certain personality traits including sensation seeking, and these were equally correlated with smoking and alcohol use. This was also related to more complaints about parents, teachers, the school system and learning problems. These authors remark on the need for more recognition of individual differences with relation to the problems of adolescents.

The consistent replicability of these studies is confirmation of the predictive validity of SS of likely future cigarette smoking, drug use and abuse, and alcohol use, and indicates certain other personality correlates which could be visible at an early age in those with high SS tendencies. These could be examined in another study, for example the findings of Kuiper and Feij (1983) on school complaints and learning problems; Cloninger's (1988) study showing

novelty-seeking and harm-avoidance in 11-year-olds; and Bry's (1983) indication that larger numbers of risk-taking behaviors is more predictive of drug-use than any particular one set of behaviors.

Correlation of SS with Other Personality Factors

Most of the research in SS is in agreement that this personality factor is typically higher in adolescents though not exclusively; it correlates with psychoticism, extroversion, boredom and reduced Lie Scale scores. Findings have been consistent and replicable, so for the purpose of this paper the author will assume these as facts. However, there are other correlates which may have value in considering whether SS is readily detectable in others.

In a review of the literature studying control groups and sensation seekers, Watson in Australia (1985), found that high sensation seekers were more homogeneous as a group than the controls and that they volunteered more for unusual psychological experiments, and participated in risky jobs and sports.

Rowland et al (1986) administered a life-span inventory of sports participation, together with SS Scale (form V), finding that high sensation seekers are involved in more sports, but for shorter periods of time than low sensation seekers. Low, but still significant correlations were found between participation in risk-taking sports and SS, in particular climbing, downhill skiing, and parachuting. Sensation seekers also showed higher than average participation in low risk sports such as shooting, pool, snooker and dancing, indicating that novelty rather than risk is a deciding factor here. (It could also relate to Bry's theory that numbers of experiences rather than type of experience is important.) However,

risky sports are still preferred by sensation seekers--high risk sports were the most popular choices of high sensation-seeking males (p.219).

Music preference of sensation seekers was examined by Little & Zuckerman (1986); they found that SS showed positive correlation with all types of rock music, and negative correlation with blander music. Sensation seekers seem to prefer high intensity and complexity in music. It would be interesting to examine correlation with classical music--typically complex and intense--probably its demand for concentration and involvement would mean it had little immediate appeal to sensation seekers who seem to be more in need of rapid and immediate stimulation. However, exposure to this type of music, particularly the more complex composers (Bartok, Stravinsky) may be one avenue to explore in the attempt to provide high sensation seekers with the stimulation they need in safer areas than they often choose for themselves.

Nelson et al (1984) in Canada ran an interesting experiment. Earlier research had shown that red is a more exciting and stimulating color than blue, so these authors hypothesized that sensation seekers would have a preference for red. 170 adolescents (mean age 13.64 years) were shown red and blue colored circles and asked to respond with their preference. They were also tested for SS on General SS Scale form IV. Young sensation seekers prefer red to blue! Such simple correlations with SS could provide a useful heuristic measurement of the phenomenon.

It appears that vivid mental imagery has been correlated with high levels of SS. The subjects in this study conducted by Krishna-

Rao (1988) in India were postgraduate students, and therefore older than the age group concerned with here. However, it would be interesting to determine if this aspect of personality is highly indicative of SS at a younger age. Teachers might find this a useful indication to use in determining individual sensation seekers among their pupils.

Wallbank (1985) conducted a study in the midwest on 49 8th grade students. He indicates that high sensation seeking characteristics produce prosocial behavior, as well as the well-known antisocial correlates. In this study subjects with high delinquency scores also displayed larger numbers of volunteering behaviors. He discusses the low esteem and defensive behavior following the frustration of high sensation seeking individuals in conventional society. He then suggests some activities which might be provided to meet the needs of high sensation seeking delinquents, including the encouragement of helping behavior. "Encouraging helping behavior as a part of treatment can offer the person a new self-definition that is incongruent with antisocial behavior....Alcoholics Anonymous..[is]...an example of this method" (17).

Nelson and Shapiro (1987) tested a hypothesis from Farley's theory of SS behavior and arousal, i.e. that impulsive children would be high sensation seekers (as opposed to reflective children who would be low). They tested 71 children, average age a little under 9 years-old. The expected correlation between impulsivity and high SS was found, and the authors remark that arousal levels (low arousal/high SS and vice versa) have been shown to effect

creativity, delinquency, and teaching mode preference. They suggest that arousal and SS "might be a general underlying factor strongly influencing behavior and cognitive processes" (p.155).

Studying 59 high school students, Foerstner and Schuerger (1982) used Cattell's High School Personality Questionnaire and Zuckerman's Sensation Seeking Scale to determine whether scores on items of the SS Scale correlated with similar items in Cattell's questionnaire. They found a significant relationship between SS and personality Factor F (cheerful), and negative relationships between SS and Factor G (conscientious) and Factor J (individualistic). These authors concluded that "the adolescent sensation seeker is characterized as cheerful, expedient, not sensitive, group-oriented, careless of social rules, and low in anxiety and control, particularly low in tension and nervous excitability" (p. 510-511).

All these aspects of SS could be incorporated into the descriptive outline and checklist proposed here. Personality correlates with SS could form the basis for a description of SS, which expands on Zuckerman's (p.10) general definition, especially including Foerstner and Schuerger's adolescent SS profile. Behavioral correlates could be used in the questionnaire/checklist including such items as intense involvement in a wide variety of sports, liking for hard rock and/or other intense music, tendency to volunteer for any- and everything, vivid mental imagery, and a preference for red!

Sensation Seeking and Choice of Occupation.

There is little advantage to being able to assess high SS from a population of children unless it is also possible to provide direction

for handling them. Farley (1986) has given some indications for possible areas to explore. Further studies could (and should) provide information for outlets for younger children who show high SS tendencies. A little more information is available at present on high sensation seekers in the workplace. The particular characteristics of high sensation seekers make them good candidates for certain occupations which fulfill their need for high stimulation from the environment, often work for which others are less suited. This aspect of SS should be of interest to all those involved with helping young people make career choices, both for making good choices for high sensation seekers, and avoiding bad ones for low sensation seekers.

Not surprisingly, Zaleski's study on SS and vocational choice done in Poland (1984) showed that high sensation seekers chose high risk activities. They studied three groups of men (180 SS, ranging from 18-50 years old) divided into physical risk professions (firemen, mountain rescue squad men), sportsmen (racing car drivers, mountain climbers) and a non-risk control group. The high risk professions had significantly higher numbers of sensation seekers. Oleszkiewicz-Zsurzs (1982) also in Poland, conducted a similar study among men aged 16-20 years with similar results.

Journalism seems a particularly good choice of occupation for high sensation seekers (or else has received more attention as a subject of study!) Umpathy and Survana in India (1988) studied 85 journalists, and a control group of 85 non-journalists and found that journalists ranked higher on SS, especially the sub-scores of Thrill and Adventure Seeking and Experience Seeking. Hirschowitz and Nell

(1983) extended the basic idea when they studied journalists in South Africa. They postulated that high SS would correlate with need for power, heavy drinking, voyeuristic behavior (stage one) and acting out. They compared 55 journalists with 55 controls and found the expected correlation.

Research Purpose

In view of the problems outlined in the previous section, and of the probably high innate ability of individuals to determine SS in others, a new approach is indicated. Considering the amount of research generated by Zuckerman's concept of SS, very little appears to have been done with the vast accumulation of knowledge outside the scientific community. The only articles found which tries to apply the research are Farley's, e.g. "The Big T in Personality" in Psychology Today by Frank Farley (1986). This paper relates some of the generally known facts about SS (called Big T here) and suggests directions for education taking the individual differences of Big T's and Little t's (low sensation seekers) into account. Farley remarks that the measures he has suggested are readily testable-- "if the need for stimulation and risk taking can be satisfied by providing appropriate environments and experience [such individuals]..are less likely to get into trouble" ... "society's most successful preventive solutions might be psychological, not legal or technological" (p.52). However, this all seems premature when Farley provides no techniques for those involved with young adolescents for knowing which individual falls into the high and low SS (or Big T and Little t) categories.

Rowland's 1988 paper indicates that SS is easily detectable by those with some understanding of the concept. If this is the case, perhaps time for long questionnaires is now past. They have served their purpose, and from the vast amount of information they have provided several characteristics highly indicative of SS can be isolated. Those who need simple, practical knowledge about the

phenomena (this would include teachers and parents, and others involved with children approaching adolescence) can be educated about what typically to look for. Then, always aware of the dangers of stereotyping individuals, care could be taken to direct those children "at-risk" into activities which would satisfy their high needs for stimulation and novelty.

As a first step in providing correct and useful information, a Life History Interview (LHI) should be conducted to ensure that it is possible to assess heuristically whether or not an individual is likely to be a High (or Low or Average) Sensation Seeker. Such a LHI should incorporate questions which are known from the research to sample high risk-taking behavior. If a small pilot study is conducted and found successful, a larger study should be conducted with perhaps a modified set of questions, until a satisfactory small set of correlating factors is isolated. Absolute accuracy is not necessary because this information should only be used mentally to assess "at risk" youngsters, to remain aware that they are possibly at higher risk than their peers, and to help provide them with satisfying experiences to counter the boredom which is anathema to them.

The long-term object of this study would be to educate those who interact with young people about what to look for when assessing an individual for SS, how to make reasonable assessments about it, and to provide some practical suggestions about keeping "at risk" individuals provided with satisfactory alternatives to the thrills and excitement provided, for example, by drug experimentation.

Method

Zuckerman devised several Sensation Seeking Scales. All were self-report questionnaires, each question containing the choice between two items expressing opposing characteristics, e.g.

- A. I dislike the sensations one gets when flying.
- B. I enjoy many of the rides in amusement parks. (Zuckerman, p.380).

This interviewer is of the opinion that accurate assessment of SS is possible through an appropriate Life History Interview (LHI).

The experimenter's theory was that using a LHI would:

- (1) provide an alternative and simpler means of measuring SS
- (2) provide additional personality, demographic and other data not available through other existing questionnaires
- (3) minimize self-report bias
- (4) determine that subjects reporting as high sensation seekers, have actually participated in sensation seeking activities. The fact that this cannot be determined in self-report questionnaires is a weakness of Zuckerman's SS Scales.
- (5) eventually it should be possible to find a few, highly indicative items which could be used by those involved with young people to assess the likelihood of an individual being a high sensation seeker. If this should prove to be possible, then teachers, parents etc. could use the understanding of SS to direct such young people into activities and later occupations which satisfy their need for high stimulation from their environment.

The first step is the formulation of a Life History Interview (LHI) using items known to correlate with SS. After administering

such a LHI to a small group as a pilot study, it should be possible to confirm that it may possible to assess if subjects are Sensation Seekers from a LHI, and whether the questionnaire devised by the experimenter was a valid instrument for making that assessment.

Zuckerman reported that in developing his SS Scales, both the theory of SS and the test used to assess it were developed simultaneously. This contrasts to inductive-factor analytic methods more frequently used in this type of research. In developing both construct and test together, the construct validity of the tests is deduced by comparison with other measures of the construct, or by testing behavior predicted from a larger overall theory involving that construct (p.6). Using the theory that "construct validity of the test is deduced by comparison with other measures of the construct", this interviewer hypothesized that it was possible to assess SS using a simple LHI. Zuckerman's SS Scale and Costa and McCrae's (1978) NEO Personality Inventory (Excitement Seeking Subscale) are known to provide valid measures of the construct of SS. Comparing results from the LHI with scores on the NEO should provide adequate measure of the ability of the LHI to tap into SS.

The construct of SS was clearly defined by Zuckerman (p.10-11) and should be easily identifiable to a trained interviewer. Zuckerman's definition emphasized that sensation seekers need varied, novel and complex sensations. The experimenter devised a questionnaire [see Appendix A] containing the following items based on the literature search:

1. Questions about the subject's life. There were two reasons for including this material. It was felt this would provide the experimenter with some demographic data which might prove useful later and indicate some possible areas to explore further. It also gave subjects a tension reducing set of questions to answer, before leading into more personal questions. Questions 1- 22 fall into this category.
2. Questions based on the research, and intended to hone in on those aspects known to correlate highly with SS.
Q. 23 & 24 on subjects' work history are from Farley, Hirschowitz & Nell, Oleszkiewicz-Zsurzs, Umpathy & Survana.
Q's 30 through 40 on drug, cigarette and alcohol use are from Andrucci, Bates et al, Bry, Cloninger et al, Goldring, Hobfoll & Segal, Jaffe & Archer, Kuiper & Feij, Pedersen et al, Satinder & Black, Teichman et al.
Q.'s 54 through 56 on sports are from Bry, and from Rowland et al (1986).
Q.'s 62 through 64 on music are from Little & Zuckerman.
3. Some questions for which there was no research justification, but which we felt may address the issue of SS especially since the questionnaire is designed to hone in on heuristic ability to detect SS in others. Q.'s 25 through 29 on driving and driving history we felt would provide evidence of those willing to take risks, and who had actually done so as evidenced by their driving history (number of violations). Q.'s 41 through 50 address the issue of sexual behavior, which has not previously been researched (to our knowledge). However, it seemed highly likely

that the young sensation seeker would not be conservative in this matter, and probably not averse to a discussion on sexual matters (extraversion). Q.'s 51 and 52 are open-ended questions about leisure activities and the style in which it is conducted, which may (or not) provide areas for further study. Q.'s 57 through 61 are more specific about leisure activities. This experimenter thought it unlikely that high sensation seekers would like "lonely" activities such as those in Q. 57, would not be great readers, or given to passive, vicarious experiences such as TV watching. Q.'s 65 through 67 address social issues also not researched elsewhere (except as sociability pertains to the highly correlated Extraversion of sensation seekers). Q.'s 68-70 on dressing is also an area not addressed elsewhere, and which we thought might produce interesting answers.

After administering this questionnaire, the experimenter would make an assessment of the subject's sensation seeking tendencies on a scale from 1 (low) to 10 (high). This would be decided by considering the answers to questions and the emotional tone of the interview. The assessment would then be compared to subject's actual scores on a NEO administered earlier by another experimenter, to see if the interviewer was accurate and to determine whether the LHI is a valid instrument for assessing sensation seeking. The results would be computed using Two-tailed t-test and Mann-Whitney U tests.

Administration of the LHI would be followed by giving subjects a 5 point questionnaire to answer, in which they rate their mood at the time of being interviewed by answering such questions as

"During the interview I felt stimulated.....bored" [See Appendix B]. This would provide extra data on personality and mood at the time of the interview. As subjects filled in the Mood Rating, the interviewer would assign a value on a scale from 1 (low) to 10 (high) of the SS tendency of that subject, and add notes to four questions about the overall tone and feel of the session which had aided in reaching that numerical rating [See Appendix C].

It is hypothesized that a LHI will provide enough insight into a subject's personality for an interviewer who is familiar with the concept of SS to determine whether that subject is likely to be a high or a low sensation seeker. Questions in the LHI are firmly based on previous research, but it is probable that some will be more useful than others for evaluating SS. These can be used in a smaller questionnaire which, together with a description of SS as a personality trait, are the ultimate goal of this research.

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Appendix A
LIFE HISTORY INTERVIEW

1. AGE
2. MARITAL STATUS
3. YEAR IN SCHOOL, OR IF FINISHED, YEAR YOU FINISHED SCHOOL
4. MAJOR SUBJECT IF ENROLLED IN UNIVERSITY
5. SEX
6. SIBLINGS, AND YOUR STATUS IN SIBLINGSHIP
7. First I'd like to ask a few questions about your home and family.
Tell me about your hometown, where you grew up, major life events (divorce, deaths, moves).
8. If you are away from home, do you miss your family and home?
Why or why not?
9. How would you describe your parents' style of parenting? e.g. were they strict disciplinarians, or easy going, or one of each type?

10. Would your parents approve of your lifestyle at this time?

11. How would you describe your parents' social status (low, middle or upper class)?

12. Mother's level of education

13. Mother's occupation

14. Father's level of education

15. Father's occupation

These questions are to be answered just "yes" or "no" - some of the subjects are treated in more detail later.

16. Was politics important in your home?
17. Was religion important in your home?
18. Was sport important in your home?
19. Was music important in your home?
20. Were other forms of the arts important in your home (ballet, opera, theatre, art galleries, etc.)
21. Was education important in your home?

22. Were you pressured to achieve good education?

These can be answered in more detail...

23. What types of jobs have you held?

24. What are your career plans? Why would you chose that course of action?

A few questions about your driving history.

25. Have your held your driving licence since you were of the legal age to do so?

26. Would your friends consider you a fast driver?

27. Do you consider yourself a fast driver?

28. Have you had any accidents? If so how many and who was at fault?

29. Have you had tickets for traffic violations? If so how many?

A few questions about your use of substances.

30. Do you smoke? If yes how many cigarettes a day?
31. Do you drink alcoholic beverages? If yes what is the maximum number of drinks you have had on one day in the last two years?
32. Were you intoxicated?
33. Were you hungover the next day?

34. Does alcohol either give you a lift...
or depress you?

35. About how many days of the week would you have two or more drinks?

36. Do you take any prescription medications? If so what are they?

37. Have you used drugs that are considered illegal?
38. Marijuana?

39. Others? If so which ones?

40. Have you used them recently (say in the last month)?

- A few questions now about relationships.
41. Are you currently romantically involved with anyone?

42. Would you describe the relationship as physically close?
43. Sexually intimate?
44. Have you had other physically close, or sexually intimate relationships?
45. How many, and how long did they last?
46. Are you the faithful sort?
47. Can you tell me a bit about your first sexual experiences or your initial discovery of your sexuality and sexual feelings?
48. How old were you when you had sex for the first time?
49. Were you in love with your partner?

One final question about sex, and I apologise if it strikes you as strange, but it is a question that psychologists and sociologists use sometimes in research.

50. How many sexual partners do you imagine yourself having in the next year?

Now some questions about your leisure time.

51. What are your hobbies? What do you like to do in your leisure time?

52. Do you belong to any organizations, clubs, teams or social groups such as a church group, or a fraternity/sorority?

53. Do you go to "wild" parties or do you prefer a cosy party where people chat and get to know each other?

54. How about sports, which ones do you enjoy to play?

55. If you had the resources (money, time, opportunity) could you imagine yourself skydiving?

56. Could you see yourself doing many different types of sport given the opportunity, or would you be the sort of person who is more likely to concentrate on one or two and do them really well?

57. Do you like "brain teasers" like crossword puzzles, Scrabble, Hidden Word puzzles?

58. Do you like to read? If so what types of book?

59. Do you watch much TV? What types of shows?

60. Do you like movies? If you said yes, then what types of movie do you like?

61. Will you see a movie you enjoyed may three or four times over?

62. What is your taste in music? Do you like nearly all music (including classical), or just one or two certain types?

63. Does music play a big role in your life?

64. Does it effect your moods?
65. Do you have lots of friends, or just a few close ones?
66. Are your friends like you or are they all different from you and from each other?
67. Do you prefer the company of people who are witty and sharp, or those who are quieter and more thoughtful?
68. Do you enjoy dressing in unusual ways, or do you conform to the dress standards of your group?
69. Can you imagine yourself dressing in an unconventional way for your graduation ceremony, or for your wedding, or other important social event?
70. If yes, how would you dress?

Appendix B

Subject's Rating of Mood During the Interview

Tense, worried anxious	X	X	X	X	X	Calm,relaxed composed
Suspicious Resentful Impatient	X	X	X	X	X	Trusting Cooperative Agreeable
Clear-thinking	X	X	X	X	X	Bewildered Confused
Gloomy, Depressed	X	X	X	X	X	Happy Cheerful
Bored	X	X	X	X	X	Stimulated

Appendix C

Sensation Seeking Scale

Assessment of this Individual

1 2 3 4 5 6 7 8 9 10

1. Feeling or emotional tone of the interview

2. What was said

3. How was it said

4. Non-verbal or physical aspects of behavior.

The Sensation Seeking Life History Interview.

Procedure

The Life History Interview (LHI) consisting of 70 questions was administered to eleven male undergraduate students from SIUC. These students had previously taken the NEO test (Costa & McCrae) as part of their study of Psychology 305 - Personality. They had been selected as either high or low sensation seekers by an independent examiner using the Excitement Seeking facet of the Extraversion domain. NEO results were not known to this experimenter.

Administration of the LHI took between half to one hour, and took place in the afternoon in an office at SIUC. Subjects were asked for permission to tape the session, and all except one agreed. In one other instance the tape recorder did not work. Subjects were assured that all information would be held confidential by the interviewer. Initially they were told only that the research concerned an interest in personality types and correlates.

The interviewer asked the LHI questions in a quiet, but interested manner. She made general notes on the space provided on the LHI as she conducted the interview. At the end of each interview a five item questionnaire (see Appendix B ^{in Part I}) was given to each subject, and each one was asked to rate mood during the administration of the questionnaire on a scale from 1 to 5 for each factor. As subjects answered these questions, the interviewer made a first assessment of where each subject would lie on a Sensation Seeking Scale rated from 1 (low) to 10 (high) and made notes in answer to four questions about the general tone of the session and the attitude of the subject (see Appendix C ^{in Part I}). Two hours later, having spent some time thinking about the session, the interviewer made a second and final assessment of her opinion of that subject's sensation seeking tendencies.

At the end of the session, subjects were thanked for their participation and if they were interested, further information was given about the precise nature of the research, and the particular interest of the interviewer in sensation seeking and its personality correlates.

Results

The data obtained from the assessment of sensation seeking of the subjects interviewed confirmed that it is possible to form an accurate estimation of sensation seeking using a LHI, and that this LHI was a suitable instrument for that assessment. Analysis of results is divided into two sections: (i) examining the estimation of sensation seeking using the LHI and (ii) examining the LHI as an instrument for measuring sensation seeking.

(i) Estimation of sensation seeking using the LHI as an instrument.

Data was analyzed using a two-tailed t-test to determine if the assessed sensation seeking of the subjects corresponded to the results previously obtained on the NEO test. The interviewer assessed six subjects as low and five subjects as high sensation seekers. Ratings ranged between 1 and 8 on a scale from 1 to 10.

[Insert Table 1 about here]

The data was also analyzed using a Mann-Whitney U test.

[Insert Table 2 about here]

This analysis gave the following results:

$$t(9) = 4.94, p < .001$$

$$U = 0, p = .002 \text{ (one tailed)}$$

Correlation between the interviewer's assessment of sensation seeking of the eleven subjects, and their scores on the critical questions from the LHI is shown in the scatterplot.

[Insert Table 3 about here]

Scores on the LH interview are compared with experimenter's assessment of each subjects' sensation seeking, and their actual score on the NEO

Personality Inventory in Table 4.

[Insert Table 4 about here]

The results of this pilot study indicate that it is possible to accurately assess the sensation seeking tendencies of individuals independently defined as high or low excitement seekers.

(ii) Assessment of the LHI as an instrument for measuring sensation seeking.

Some of the questions were surprisingly helpful, and others were found to be virtually useless, although all the questions had been carefully devised using criteria from the research literature. Those found to have no value here were the questions similarly answered by all subjects--a group of male undergraduates at SIUC is too homogenous a population obviously--but as the object of this study is to produce a short list of pertinent questions this experimenter felt it important to isolate those questions which may be useful indicators. The demographic questions also were not given further consideration in this study except for Q7 where the question of divorce was taken into account. Some of the deletions from the question list may appear surprising. Questions 60 & 61--interest in movies was high, and most subjects would see a movie they enjoyed more than once. Q.63--"Does music play a big role in your life?" was omitted because all subjects affirmed that it did. Q.62 on variety and type of music should be more helpful as a heuristic for sensation seeking. The questions on dress were also not indicative--dress is not a topic of great interest to male undergraduates! These questions were so clearly not indicators for this population that the questions have not been considered useful here, though of course that may not be true for other populations. Discarded items are shown in Appendix A.

The aim now is to find which individual questions best differentiate between high and low scores, with a view to reducing the size of the questionnaire and using only those questions which are sharp indicators of sensation seeking. Therefore, for the remaining items the interviewer

allocated subjects a score for each question; a value of 0 (for an answer indicating low sensation seeking) or a value of 1 (for an answer indicating high sensation seeking).

[Insert Table 5 about here]

Table 6 then summarises how each question was answered by the subjects within the two groups--i.e. the low sensation seekers and the high sensation seekers.

[Insert Table 6 about here]

By examining each question separately for each group of subjects, it is possible to assess its value in discriminating sensation seeking in relation to the rest of the questions. This should yield information on the internal consistency of items in relation to the whole questionnaire. This was done by summing across these questions and assigning each subject an interview-based sensation seeking score from 0 to 23; that is each subject (a total of 11) was assigned a 0 for an indicator of low sensation seeking, and a 1 for an indicator of high sensation seeking over the total of the 23 questions used. For each question, the set of scores (each score is the subject's total on the other 22 questions) was tested to see whether the two subsets (high and low) were from populations with the same mean. If a question had a higher mean than the population mean it could be considered a true indicator of sensation seeking, and could be said to measure sensation seeking consistently with the instrument as a whole. Results are summarized in Table 7, and Appendix B gives a summary of how each separate item was handled.

[Insert Table 7 about here]

It can be seen from this table, that items 23 ($p < .16$), 26 ($p < .02$), 29

($p < .02$), 30 ($p < .08$), 52 ($p < .05$), 53 ($p < .02$), 57 ($p < .15$), 58 ($p < .025$) and 62 ($p < .15$) gave significant results, though as yet other items, particularly 23, 57, and 62 should not yet be eliminated because of the small sample used in the study.

Item analysis was done to determine the item discrimination value of each of the selected questions.

[Insert Table 8 about here]

This was done because with such a small sample, it is possible to overlook or underrate questions which may still have value. This test confirmed the above questions as valid discriminators, and also indicated that the questions 8, 28, 48, 55, 56, 57, and 62 should still be considered as possible discriminators of sensation seeking.

Discussion

The results show that the two hypotheses that a LHI could be used to assess sensation seeking in individual subjects, and that this LHI was an appropriate instrument for that assessment, were both supported by this study.

It was suggested that a Life History Interview (LHI) would minimize self-report bias and also determine that subjects reporting as high sensation seekers have actually participated in sensation seeking activities. The fact that this last cannot be determined in self-report questionnaires is a weakness of Zuckerman's SS Scales, as also mentioned by Himeistein and Thorne (1985). In their paper Zuckerman's Sensation Seeking Scale was compared to a biographical inventory designed to predict combat effectiveness and similar military criteria. The biographical inventory (BI) has been validated as an effective measure of such behavior and is based on actual participation in risk-taking behaviors. The authors remark that "although the correlations between the BI and two of the SSS subscales reached significance there remains a high proportion of unexplained variance...One possible reason.... The BI requires the responder to indicate if he had ever *participated* [my italics] in an activity." whereas the Sensation Seeking Scale requires the expression of a preference, or a desire to participate in an activity. Of course, Zuckerman's format might measure sensation seeking tendency where opportunity for participation in excitatory activities is absent.

It is easy to decide if a subject is tending to paint an inaccurate picture of himself. A LHI especially lends itself to this type of detection because there are so many questions dealing with a broad spectrum of life events. Two subjects in this study illustrate this. One subject scored quite high on

the NEO in sensation seeking, but in his LHI was assessed very low; later assessment of questions (see Results section) confirmed this also. Here he rated with 5 positive answers to critical questions out of a possible 23! He was the individual who refused to be taped and in general appeared to be a fearful and insecure personality totally incompatible with his reported NEO rating. (Of course, there is no conclusive evidence that other factors were not at work here, such as a character low on agreeableness and conscientiousness who has done something illegal and is fearful of the consequences.) The other example was the subject who rated himself as low in sensation seeking on the NEO but was assessed as high in the LHI; for example this subject answered "Yes" to Q.46. "Are you the faithful sort?" and went on to describe a pattern of swift boredom/rapid turnover of sexual partners. His critical question score was 18 from a possible 23. Several individuals in the borderline scoring area (5 = low, 6 = high) had questionably high scores on critical questions, and one of the 5 scores, in retrospect, should have been assessed as a high sensation seeking. Analysis of the critical questions showed one deviating score, a 7 in the high category (where both his NEO score, and this experimenter's assessment placed him). Aside from this one score, the critical questions and the interviewers judgment of sensation seeking appeared to be accurate assessors of the phenomenon of sensation seeking, even where this judgement contradicted the NEO scores.

This study shows that it may be possible that interview techniques provide an alternative means for assessing sensation seeking, especially once the phenomenon is well understood by the interviewer. It could, of course, be argued that that this experiment shows that one experimenter (myself), who has studied the phenomenon of sensation seeking at some length, has

been shown to be skilled at the detection of sensation seeking. While this is true, it does not preclude the possibility that others (given some background understanding of the phenomenon) could not be equally as skilled. Rowland et al (1988) found that rapid and accurate judgements of sensation seeking in others were possible. In their study, an experiment was "designed to determine if individuals agree about the level of sensation seeking which they perceive in a third party whom they do not actually know or with whom they have not interacted. This degree of agreement and accuracy was assessed by having individuals rate the sensation seeking of certain characters portrayed in commercial movies." (Rowland et al, p.237). Inter-observer agreement was high, and consistent with sensation seeking as portrayed by the movie characters. Subjects' ratings were shown to be independent of their own scores in sensation seeking in this study. This is important, as it indicates that it doesn't "take one to know one" in common parlance.

In undertaking this study, I was motivated by concerns which were also expressed by Hobfoll and Segal (1983)--that sensation seeking has been widely studied, its personality and behavioral correlates are well known and of a high-risk nature, yet little of practical value has been made available to those people who are in a position to benefit most--those dealing with youth during their critical years of development when they are most at risk for drug and alcohol experimentation.

"...these youth [principally alcohol users who manifested trait anxiety, as well as sensation seekers, who appear unable to report their feelings openly] clinically appeared to be quite troubled and stressed, they may be reluctant or unable to report such feelings openly. Intervention with such youth, whether for drug use or emotional problems, therefore, may

have to be conducted in a manner which avoids introspections ... and which emphasizes alternatives to drugs.... might focus on helping the youth to achieve a sense of self-understanding through more action-oriented experience, such as wilderness experience programs. ... As sensation seeking itself appears to, in part, be characterized by an orientation towards self-understanding, this action-directed approach might even serve to actualize this orientation.

...at times the environment must be the target of change. For example, rather than lowering individuals' sensation seeking or anxiety through therapy/treatment, more stimulating activities and more ego-gratifying work, for teenagers especially, might be the objects of intervention.

Further research might focus on those sensation-seeking and/or anxious youth who are channeling their energies and problems in a healthy, constructive direction. Intervention programs also need to design treatment based, at least in part, on the rich research literature in order to test its practical applicability". (Hobfoll & Segal, p.548-9)

Based on these ideas, a draft of a description of sensation seeking and a checklist for determining whether particular individuals may fall into this category will be proposed for further study and refinement. Individuals for whom it is judged appropriate, using these instruments, should then be provided by concerned others, with challenging and interesting activities from their environment; for example, both Watson (1985) and Wallbank (1985) found sensation seeking highly correlated with volunteering behaviors and Watson suggested encouraging helping behaviors might be a valuable outlet for sensation seekers. Hobfoll & Segal (1983) suggested the satisfaction of sensation seeking needs in a controlled manner (e.g. mountain climbing, wilderness programs), which may also lead to better self-understanding for sensation seekers. I think it is also important (though to my knowledge this has not previously been suggested) that such individuals be encouraged in wide-ranging daily interests. A wilderness program, and voluntary work, while these are doubtless valuable experiences, will only

account for a small part of a person's daily life. Boredom is the main problem leading to experimentation and mischief. The sensation seeker and those around him, should understand him and his needs, and not discourage rapid change and turnover in hobbies and interests, not expect consistency and application in a studied and persevering manner until time, and maturity, and desire for achievement, make these possible aims for the sensation seeker himself. Here it is difficult to steer a clear-cut course, because society doesn't encourage the type of rapid-turnover behavior described here and rightly so. In the long run such individuals achieve little in life. Also it is hard to say to one individual that a certain behavior is OK for him because he "is" a certain "type" of person--while not excusing another for similar behavior because he "is not" that "type"--the implications are enormous. In the long run the responsibility will lie with the individual to determine his own course in life and how he will deal with problems and possibilities his personality type provide him. Meanwhile, for those formative years, some adult tolerance is needed for the sensation seeker. He needs active and informed supervision, and guidance into experiences and later into vocations that provide the greatest outlet for his needs and use of his unique talents.

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Experimenter's Rating	Number of Subjects Given that Rating
1	1
2	2
3	0
4	1
5	2
6	1
7	1
8	3
9	0
10	0

Table 1.
Frequency Distribution of Interviewer Ratings.

Experimenter's Ratings of Excitement Avoiders	Experimenter's Ratings of Excitement Seekers
1	6
2	7
2	8
4	8
5	8
5	

Table 2

Used for Mann-Whitney U Analysis of Experimenter Ratings.

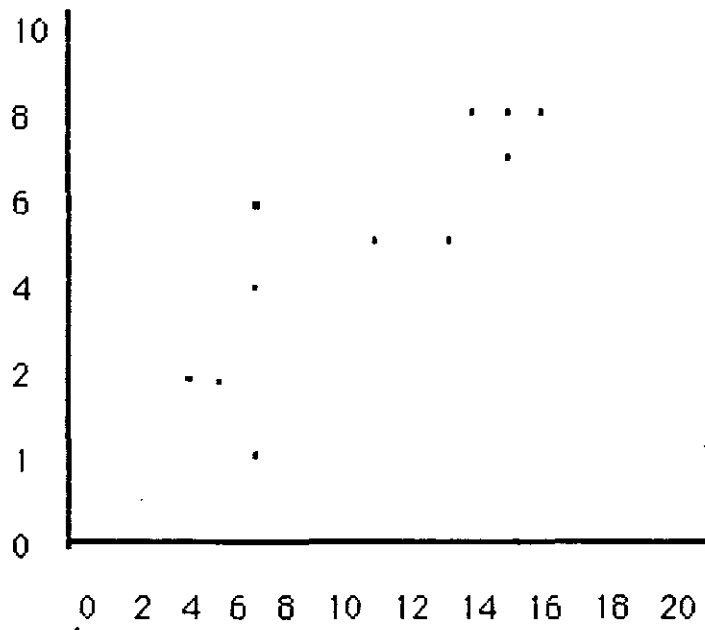


Table 3
 Scatterplot showing relationship between number of questions keyed in the direction of Sensation Seeking, and the experimenter's rating of subjects' Sensation Seeking.

Interview Scores (from a possible 23--one point for each question keyed in SS direction)	Experimenter Rating	Group Rating based on Neo Personality Inventory Scores
7	1	low
4	2	low
5	2	high
7	4	low
11	5	low
13	5	low
7	6	high
15	7	high
14	8	high
16	8	low
15	8	high

Table 4

Comparison of scores keyed in the direction of Sensation Seeking, the experimenter's assessed score on SS on a scale from 1-10, and actual results on the NEO Personality Inventory.

Questions included in analysis	If answer indicated low SS - 0 points assigned	If answer indicated high SS - 1 point assigned
7 - Were your parents divorced?	no	yes
8 - Do you miss family and home?	yes	no
10 - Would your parents approve of your lifestyle?	yes	no
23 - How many jobs have you tried?	few	many
26 - Would your friends consider you a fast driver?	no	yes
28 - Car accidents? Many? Your fault?	no	yes
29 - Traffic violations? Many?	no	yes
30 - Do you smoke?	no	yes
35 - How often do you drink two or more drinks?	seldom	often
37 - Have you used drugs that are considered illegal?	no	yes
39 - Drugs other than marijuana?	no	yes
40 - Have you used them recently?	no	yes
44 - Have you had many intimate relationships?	no	yes
45 - How many relationships (few < 2, many > 2)?	few	many
48 - Age having sex for the first time (<18, > 18)?	younger	older
52 - Membership in organizations?	many	few
53 - Prefer wild parties or cozy parties?	cozy	wild or both
55 - Would you skydive?	no	yes
56 - Like many different sports, or doing one or two really well?	few	many
57 - Do you like brainteasers?	yes	no
58 - Do you like to read?	yes	no
62 - Taste in music (few types or a wide variety)?	few	many
67 - Prefer witty, sharp friends or quiet, thoughtful ones?	quiet	both

Table 5

Questions examined for sensation seeking discrimination. Each question answered in the sensation seeking direction (column 3) was assigned a point.

Question Number and Topic	Low interview scorers		High interview scorers	
	0	1	0	1
*7- Divorce	3	3	3	2
*8- Family feelings	5	1	2	3
*10- Lifestyle approval	5	1	5	0
*23- Jobs 5+	3	3	3	2
*26- Fast driver	5	1	2	3
*28- Accidents	6	0	4	1
*29- Traffic tickets	5	1	2	3
*30- Smoke	4	2	2	3
*35- Drink 2+	5	1	1	4
*37- Tried drugs	2	4	0	5
*39- Other than marijuana	4	2	3	2
*40- recent use	3	3	4	1
*44- Many intimate relationships	3	3	3	2
*45- Faithful	6	0	5	0
*48- Age of first sex experience <18	4	2	2	3
*52- Club, social group memberships	6	0	0	5
*53- Wild parties	3	3	1	4
*55- Skydive	4	2	1	4
*56- Sport variety	4	2	2	3
*57- Brainteasers	4	2	2	3
*58- Read	6	0	2	3
*62- Variety of music	2	4	0	5
*67- Friends, quiet or witty	1	5	2	3
Totals	98	45	51	64

Table 6

Answers to each question divided by High and Low Sensation Seekers

Note : 0 columns refer to the number of subjects answering that item in the non-Sensation Seeking direction; 1 refers to the number in keyed in the Sensation Seeking direction.

Item-Q. Number	Low Number	Low Mean	High Number	High Mean	t-test
7	63/6	10.5	46/5	9.2	not tested
8	63/6	10.5	46/5	9.2	not tested
10	101/10	10.1	12/1	12	not tested
23	52/6	8.7	57/5	11/4	t(4)=1.096
26	56/7	8.0	57/5	11.4	t(3)=3.503
28	98/10	9.8	15/1	15	not tested
29	56/7	8.0	54/4	13.5	t(3)=3.503
30	48/6	8.0	61/5	12.2	t(4)=1.87
35	41/6	6.8	68/5	13.6	t(4)=6.6
37	9/2	4.5	98/9	10.9	t(1)=5.76
39	72/7	10.3	38/4	9.5	not tested
40	74/7	10.6	36/4	9.0	not tested
45	55/6	9.2	54/5	10.8	t(4)=.6 ns
48	60/6	10.0	49/5	9.8	not tested
52	47/5	7.8	62/5	12.4	t(4)=2.63
53	23/4	5.8	84/7	12.0	t(3)=4.44
55	45/5	9.0	63/6	10.5	t(4)=.58 ns
56	66/7	9.4	44/4	11.0	t(3)=.52 ns
57	50/6	8.3	59/5	11.8	t(4)=1.46
58	68/8	8.5	43/3	14.3	t(2)=4.29
62	12/2	6.0	93/9	10.3	t(1)=2.45
67	4/1	4.0	100/10	10	not tested

Table 7

Internal consistency: Mean number of other answers in sensation seeking direction as a function of answer on each item.

Question Number and Topic	High SS Subjects' scores		Low SS Subjects' scores		Item Discrimination Index
	0	1	0	1	
* 7 - Divorce	3	2	3	3	.1 ns
* 8 - Family feelings	2	3	5	1	.44
* 10 - Lifestyle approval	5	0	5	1	-.16 ns
* 23 - Jobs 5+	3	2	3	3	-.1 ns
* 26 - Fast driver	2	3	5	1	.44
* 28 - Accidents	4	1	6	0	.2
* 29 - Traffic tickets	2	3	5	1	.44
* 30 - Smoke	2	3	4	2	.27
* 35 - Drink 2+	1	4	5	1	7.83
* 37 - Tried drugs	0	5	2	4	.33
* 39 - Drugs other than marijuana	3	2	4	2	.07 ns
* 40 - Recent use	4	1	3	3	.15 ns
* 44 - Many intimate relationships	3	2	3	3	.1 ns
* 45 - Faithful	5	0	6	0	ns
* 48 - Age/first sex (< 18 or > 18 y.o)	2	3	4	2	.27
* 52 - Club, social group member	0	5	6	0	1.0
* 53 - Wild parties	1	4	3	3	.3
* 55 - Skydive	1	4	4	2	.47
* 56 - Sport variety	2	3	4	2	.27
* 57 - Brainteasers	2	3	4	2	.27
* 58 - Read	2	3	6	0	.6
* 62 - Variety of music	0	5	2	4	.33
* 67 - Friends, quiet or witty	2	3	1	5	-.23 ns

Table 8

Item Analysis: Discrimination indices for each question.

Appendix A

Discarded questions:

Demographic questions 1 through 6, and most of 7 excluding "Were you parents divorced?"

9. Parenting style

11-22 - Background information - family education levels etc.

24 - Career plans

25 - Age of obtaining drivers licence (all answered 16)

27 - Do you consider yourself a fast driver (all said "No")--26 - Would your friends consider you a fast driver? was more telling.

31-34 - Alcohol -- most admitted to being very moderate drinkers.

36 - Medications - no.

38 - Have you used marijuana? Most had "just tried it"

41 - 44 - Romantic relationships - most were intimate, none had many.

46 -47 - Sexual experiences - just not a discriminating question.

49-51 - Ditto

54 - Sports -- too general

59 - TV - all watched a lot of TV.

60 -61 - Interest in movies was generally high. All would see a good movie more than once.

63 - 64 - Music -- again interest was generally high.

65-66 - Friends -- not a discriminating question

68 - 70 - Dress -- male, SIU undergraduates aren't interested in dress.

Appendix B

There will be 23 statistical analyses, one for each question. For each analysis, the null hypothesis is that the question does not measure the same quality as is measured by the aggregation of the other 22 questions, that is high sensation seeking. For each question the subject is classified as high(1) or low(0). The set of 11 scores (each score is the subject's total on the other 22 questions) is tested, using a one-tailed t-test for the difference between means, to see whether the two subsets (high and low) are from populations with the same mean, with the alternate hypothesis that the high population has a higher mean. Clearly no arithmetic is necessary if the means are equal or if the high population has a lower mean.

Q.7. Tell me about your hometown, where you grew up? (Friendships, major life events, divorce, death, moves?) This question was scored as if it were:
Were your parents divorced?

Scoring: No = 0, Yes = 1.

Score of 0 Totals: 7, 4, 7, 16, 15, 14. Mean = $63/6 = 10.5$

Score of 1 Totals: 4, 12, 10, 6, 14. Mean = $46/5 = 9.2$

There are no grounds for rejecting the null hypothesis.

Q.8. If you are away from home do you miss your family and home?

Scoring: Yes or lives at home = 0, No = 1.

Score of 0 Totals: 7, 5, 7, 13, 15, 16. Mean = $63/6 = 10.5$

Score of 1 Totals: 3, 10, 6, 14, 13. Mean = $46/5 = 9.2$

There are no grounds for rejecting the null hypothesis.

Q.10. Would your parents approve of your lifestyle at this time?

Scoring: Yes = 0, No = 1.

Score of 0 Totals: 7, 4, 5, 7, 11, 7, 15, 16, 15, 14. Mean = $101/10 = 10.1$

Score of 1 Totals: 12. Mean = $12/1 = 12$.

One subject in a subset will not give a stable mean.

Q. 23. What types of jobs have you had?

Scored in terms of the # of jobs tried.

Scoring: Less than five = 0, Five or more = 1.

Score of 0 Totals: 7, 4, 5, 7, 15, 14. Mean = $52/6 = 8.7$

Score of 1 Totals: 6, 12, 10, 14, 15. Mean = $57/5 = 11.4$

$t(4) = 1.096, p < .16$.

Q. 26. Would your friends consider you a fast driver?

Scoring: No = 0, Yes = 1.

Score of 0 Totals: 7, 4, 5, 7, 11, 7, 15. Mean = $56/7 = 8.0$

Score of 1 Totals: 12, 15, 14, 13. Mean = $54/4 = 13.5$

$t(3) = 3.503, p < .02$

Q. 28. Have you had any accidents. If so how many and who was at fault?

Scoring: No (at most one of own fault) = 0, Yes = 1.

Score of 0 Totals: 7, 4, 5, 7, 13, 11, 7, 15, 15, 14. Mean = $98/10 = 9.8$

Score of 1 Totals: 15. Mean = $15/1 = 15$.

One subject in a subset will not give a stable mean, but the difference is clinically significant at 15 vs. 9.8.

Q. 29. Have you had tickets for traffic violations? If so how many?

Scoring: One or less recently = 0, More than one recently = 1.

Scoring 0 Totals: 7, 4, 5, 7, 11, 7, 15. Mean = $56/7 = 8.0$

Score of 1 Totals: 12, 15, 14, 13. Mean = $54/4 = 13.5$

$t(3) = 3.503, p < .02$

Q.30. Do you smoke? If yes, how many cigarettes a day?

Scoring: No = 0, Yes = 1

Score of 0 Totals: 4, 5, 7, 11, 7, 14. Mean = $48/6 = 8.0$

Score of 1 Totals: 6, 12, 14, 15, 14. Mean = $61/5 = 12.2$

$t(4) = 1.87, p < .08$

Q.35. How many days of the week would you have two or more drinks?

Scoring: Less than twice = 0, Twice or more = 1.

Score of 0 Totals: 7, 4, 5, 7, 11, 7. Mean = $41/6 = 6.8$

Score of 1 Totals: 12, 14, 13, 15, 14. Mean = $68/5 = 13.6$

$t(4) = 6.6, p < .0025$

Q.37. Have you used drugs that are considered illegal?

Scoring: No = 0, Yes = 1

Score of 0 Totals: 4, 5. Mean = $9 = 4.5$

Score of 1 Totals: 6, 6, 12, 10, 6, 14, 13, 15, 14. Mean = $98/9 = 10.9$

$t(1) = 5.76, p < .08$. Also a clinically significant difference at 4.5 vs. 10.9.

Q.39. [Have you used] Others? [than marijuana] If so which ones?

Scoring: No = 0, Yes = 1.

Score of 0 Totals: 7, 4, 5, 11, 14, 16, 15. Mean = $72/7 = 10.3$

Score of 1 Totals: 6, 12, 6, 14. Mean = $38/4 = 9.5$

There are no grounds for rejecting the null hypothesis.

Q. 40. Have you used them recently (say in the last month?)

Scoring: No = 0, Yes = 1

Score of 0 Totals: 4, 5, 13, 7, 15, 14, 16. Mean = $74/7 = 10.6$

Score of 1 Totals: 6, 6, 10, 14. Mean = $36/4 = 9.0$

There are no grounds for rejecting the null hypothesis.

Q.45. How many [relationships have you had] and how long did they last?

Scoring: Few = 0 (< 2), Many (>2) = 1

Score of 0 Totals: 7, 4, 7, 7, 15, 15. Mean = $55/6 = 9.2$

Score of 1 Totals: 4, 12, 10, 13, 15. Mean = $54/5 = 10.8$

$t(4) = .597$, n.s.

Q.45. Are you the faithful sort?

Scoring: Yes = 0, No = 1.

All answered "yes". No analysis appropriate.

Q. 48. How old were you when you had sex for the first time?

Scoring: Older than 18 = 0, 18 or less = 1

Score of 0 Totals: 7, 7, 13, 11, 7, 15. Mean = $60/6 = 10.0$

Score of 1 Totals: 3, 4, 14, 13, 15. Mean = $49/5 = 9.8$

There are no grounds for rejecting the null hypothesis.

Q. 52. Do you belong to any organizations, clubs, teams or social groups such as a church group, or a fraternity/sorority?

Scoring: More than 1 = 0, None or 1 = 1.

Score of 0 Totals: 7, 4, 5, 7, 13, 11. Mean = $47/6 = 7.8$

Score of 1 Totals: 6, 14, 13, 15, 14. Mean = $62/5 = 12.4$

$t(4) = 2.633, p < .05$

Q.53. Do you go to "wild" parties, or do you prefer a cosy party where people chat and get to know each other?

Scoring: No parties or the latter = 0, Wild parties or both = 1.

Score of 0 Totals: 4, 5, 7, 7. Mean = $23/4 = 5.8$

Score of 1 Totals: 6, 12, 10, 14, 13, 15, 14. Mean = $84/7 = 12.0$

$t(3) = 4.448, p < .02$

Q.55. If you had the resources (money, time, opportunity) could you imagine yourself skydiving?

Scoring: No = 0, Yes = 1.

Score of 0 Totals: 7, 7, 13, 11, 7. Mean = $45/5 = 9.0$

Score of 1 Totals: 3, 4, 14, 13, 15, 14. Mean = $63/6 = 10.5$

$t(4) = .5846, n.s.$

Q.56. Could you see yourself doing many different types of sport given the opportunity, or would you be the sort of person who is more likely to concentrate on one or two and do them really well?

Scoring: Few and well = 0, Many = 1.

Score of 0 Totals: 7, 5, 7, 13, 11, 7, 16. Mean = $66/7 = 9.4$

Score of 1 Totals: 3, 14, 13, 14. Mean $44/4 = 11.0$

$t(3) = .5207, n.s.$

Q. 57. Do you like "brainteasers" like crossword puzzles, Scrabble, Hidden Word puzzles?

Scoring: Yes = 0, No = 1.

Score of 0 Totals: 4, 5, 7, 13, 7, 14. Mean = $50/6 = 8.3$

Score of 1 Totals: 6, 10, 14, 15, 14. Mean = $59/5 = 11.8$

$t(4) = 1.459, p < .15$

Q.58. Do you like to read?

Scoring: Yes = 0, No = 1.

Score of 0 Totals: 7, 4, 5, 7, 13, 11, 7, 14. Mean = $68/8 = 8.5$

Score of 1 Totals: 14, 15, 14. Mean = $43/3 = 14.3$

$t(2) = 4.29, p < .025$

Q.62. What is your taste in music? Do you like nearly all music (including classical), or just one or two certain types?

Scoring: Few types = 0, Wide variety = 1.

Score of 0 Totals = 5, 7. Mean = $12/2 = 6.0$

Score of 1 Totals = 6, 3, 12, 10, 6, 14, 13, 15, 14. Mean = $93/9 = 10.3$

$t(1) = 2.45, p < .15$

Q. 67. Do you prefer the company of people who are witty and sharp, or those who are quieter and more thoughtful?

Scoring: Quiet types = 0, Both or witty and sharp = 1.

Score of 0 Totals: 4. Mean = $4/1 = 4.0$

Score of 1 Totals: 6, 4, 6, 12, 10, 6, 14, 13, 15, 14. Mean = $100/10 = 10.0$

One subject in a subset will not give a stable mean.