Stress Seeking: Selected Behavioral Characteristics of Elite Rock Climbers

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Although it has generated much theorizing (Csikszentmihalyi, 1975; Ellis, 1973; Harris, 1980; Mitchell, 1983), the phenomenon of stress-seeking behavior, as demonstrated in regular long-term involvement in the high-risk sports, has not been researched widely. In an attempt to go beyond the prevalent but simplistic "exhilaration" type of explanation for stress-seeking, this study examined the phenomenon in terms of the psychological characteristics associated with successful long-term involvement in the risk sport of rock climbing. Four behavioral characteristics were assessed: sensation seeking (SS), defined as "the need for varied, novel and complex sensations and experiences and the willingness to undertake physical and social risks for the sake of such experiences" (Zuckerman, 1979, p. 10); trait anxiety (TA), which refers to relatively stable individual differences in anxiety proneness (Spielberger, Gorsuch, & Lushene, 1970); need for achievement (NAch), which relates to the determinants of direction, magnitude, and persistence of behavior when the individual knows that his or her performance will be evaluated (Atkinson, 1964); and affiliation (AFF), which refers to the tendency to seek out, attain, and maintain a social bond with other people (Alderman, 1974).

Methods

Subjects

Elite rock climbers (ERC) were defined as those individuals for whom serious, extreme grade rock-climbing (five 8-grade and above of the U.S. grading system) was a regular and ongoing part of their lifestyle. Male volunteer subjects (N = 30) who satisfied this definition were identified and selected from climbing instructor lists (n = 12) for Vancouver, British Columbia, club membership lists (n = 6) from Doncaster, England, and climbers (n = 12) interviewed in Yosemite Park, California. Mean age was 27.26 years, mean number of climbing years experience was 9.11, and (lead) climbing ability ranged from five 8- up to five 12-grades, which are the highest and most difficult levels of the U.S. climbing grade system (Ourom, 1980).

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**Procedure**

All communications (introductory letter, inventories, and questionnaire) with Canadian and English subjects were by mail. The Yosemite subjects were met individually in the field. A brief outline of the nature and purpose of the study was provided, and confidentiality and anonymity was assured. The return rate was 100%. Each subject completed the Sensation Seeking Scale (Zuckerman, 1979), the Trait Anxiety Inventory (Spielberger et al., 1970), and the Sports Behavior Scale (HSBS) (Howe, 1977) which measures achievement and affiliation. The HSBS has been shown to discriminate between groups of elite and nonelite athletes, recreational and competitive sport participants, males and females, and different age groups (Howe, 1976, 1977). It has also proven to be a reliable measure over time. For the achievement subscale, correlations were obtained of .77, .88, and .77 for internal consistency, 1-week test-retest scores, and 6-month test-retest scores, respectively. For the affiliation subscale, correlations were obtained of .68, .88, and .80 for internal consistency, 1-week test-retest, and 6-month test-retest scores, respectively (Zachary, 1985). In addition, a questionnaire was administered which added information on the background and each of the variables outlined above. Additional comments, personal insights, and anecdotes were encouraged.

**Analysis of Data**

As part of a comparison study, a MANOVA using the Wilks’s lambda criteria was performed on the scores for all variables for the ERC and those of an “elite games player” group (n = 27, drawn from the University of Victoria soccer and rugby first teams), and a significant difference was found between the groups, F(8, 48) = 6.37, p < .001. Individual scores for the normative groups were unavailable, but on the basis of the MANOVA result a significant difference between the ERC and the normative groups could be expected (L.K. Rosenblood, personal communication, May 28, 1983). Following the recommendation of Hummel and Sligo (1970), univariate one-tailed t-tests were employed to compare the ERC mean score against normative data on each of the variables. Based on the total set of responses to the interview questionnaire, a brief summary analysis for each variable is also presented.

**Results**

**Sensation Seeking.** In comparison to normative data (Zuckerman, 1982, p. 4) for American undergraduate males (n = 377, ages 17-21), ERC (N = 29, M = 24.31, SD = 4.00) were significantly higher than the norm group (M = 21.20, SD = 5.30) in total SS, t(28) = 3.93, p < .001. The ERC (M = 8.66, SD = 1.54) were significantly higher than the norm group (M = 7.80, SD = 2.1) on the subcomponent of “thrill and adventure,” t(28) = 2.81, p < .01. The ERC (M = 6.72, SD = 1.39) were also significantly higher than the norm group (M = 4.70, SD = 1.90) on the subcomponent of “experience seeking,” t(28) = 7.32, p < .001.

All subjects took part in a variety of sporting, intellectual, and less conventional pursuits such as marijuana and hallucinogenic drug use. They all felt that a lack of regular and intensive physical activity caused frustration and a desire for action. At least 70% expressed a preference for the higher risk of climbing at the limit of their leading ability than leading at easier grades or seconding a route, and had a susceptibility and aversion to boredom. Other risk sports (hang-gliding, white-water kayaking, downhill skiing) were
named as substitutes for rock-climbing. In summary, responses supported the contention that ERC were high in SS.

**Trait Anxiety.** When compared against normative data (Spielberger et al., 1970, p. 10) for American undergraduate males \( n = 253, M = 37.68, SD = 9.69 \) the ERC \( n = 29, M = 33.52, SD = 7.98 \) were found to be significantly lower on TA, \( t(28) = 2.56, p < .01 \). A matching of the individual TA scores with their new interview responses to the anxiety questions indicated strong compatibility between these two data types. All respondents reported feeling some degree of anxiety just prior to the start of a hard climb and at certain difficult sections on the route, but responses also indicate they were able to cope with such feelings. Some 77% reported a willingness to undertake long sections of unprotected climbing. Furthermore, 67% felt that they maintained self-control well, 20% reported occasional anxiety, and 13% reported frequent anxiety while climbing. Regarding both anxiety in a general daily life and self-confidence in life in general, these tallies were replicated, with 67% being nonanxious and self-confident, 13% being anxious and lacking in self-confidence, and 20% falling between the two extremes. In summary, responses indicated that ERC generally can be categorized as being low in anxiety both in daily life and in rock climbing.

**Need for Achievement.** When compared to normative data (B.L. Howe, personal communication, January 15, 1982) for Canadian undergraduate and high school sport participants \( n = 280, M = 56.40, SD = 7.08 \), the ERC \( n = 30, M = 57.40, SD = 5.94 \) were not found to be significantly different. The ERC mean score indicated a moderate NAch. Some 73% said that serious personal injury, the death of a friend, or a particularly traumatic experience would not cause them to forsake climbing. Seven respondents reported sustaining serious injuries and 15 had experienced the death of a friend through climbing accidents. At least 97% consciously set themselves specific climbing goals to achieve, and 90% considered themselves to still be improving their climbing technique. Finally, 85% ranked themselves as moderate risk-takers when climbing, while 10% ranked themselves as low and 3% as high. In summary, responses indicated that ERC appear to possess a moderate to high NAch.

**Affiliation.** When compared to normative data (B.L. Howe, personal communication, January 15, 1982) for Canadian undergraduate and high school sport participants \( n = 280, M = 69.46, SD = 7.17 \), the ERC \( n = 30, M = 69.37, SD = 6.00 \) were not found to be significantly different and indicated a moderate level of affiliative behavior. Of the group, 57% reported that they were not originally attracted to climbing for affiliative reasons; however, 97% referred to an affiliative advantage gained through their involvement in climbing. The majority of this sample (90%) were members of climbing clubs and/or climbed with a regular group of friends, while 70% noted that the friendships made through climbing were an important reason for their continued participation in the sport. In summary, responses indicated that ERC appear to be moderate to high on AFF.

**Discussion**

The statistical and descriptive results on SS are consistent with the conclusion of Zuckerman's (1982) review of research findings that high-risk sport participants tend to be high in SS. Such a relationship may help to explain why certain individuals are attracted to such activities.
The statistical and descriptive results on TA are consistent with the findings of Jackson (1967) on top British climbers, and Ogilvie (1974) on race-drivers, sport parachutists, and aerobatic pilots, which indicated that high-risk sport participants tend to be low in anxiety. It is likely that this trait allows them to sustain high performance levels in the high-stress situation of extreme rock climbing.

The ERC showed no significant difference from the norm group on NAch, and their mean score indicated a moderate NAch. A partial explanation for this finding could be that unlike many other sports, high achievement in rock climbing offers no real material rewards, and as such its participants are less influenced by extrinsically based achievement incentives. Interview responses indicated a moderate to high NAch.

The statistical and descriptive results together indicated the ERC to be moderate to high on AFF. This finding appears to contradict other studies, which have described climbers and other risk-sport participants as socially withdrawn and emotionally detached (Lester, 1969; Ogilvie, 1974; Ryn, 1971). This inconsistency may indicate the value of using a sport-specific scale such as the SBS (Howe, 1977) for studying behavior in an action setting.

In conclusion, it is suggested that the behavioral characteristics of SS, TA, NAch, and AFF, displayed by ERC, may help to explain the attraction for continued long-term involvement in the high-risk sports. Furthermore, for the purpose of researching sport behavior, this study points out the advantages to be gained from utilizing a research strategy that combines traditional quantitative and descriptive research methodologies.

References


