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# Traditional vs. Extreme Athletes: An Exploration of Personality Indicators

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## Abstract

The purpose of this research was to explore the personality indicators of traditional and extreme sport athletes. An online snowball sample of 149 athletes completed the 33-item questionnaire composed of personality indicators from the Myers Briggs Type Indicator and Zuckerman's Sensation Seeking Scale. T-test results revealed that extreme athletes had higher *Introversion*, *Perceiving*, and Sensation Seeking scores than traditional athletes. Visual inspection of the correlation matrix of personality indicators revealed that the Myers Briggs type *Perceiving* was the most highly correlated variable with every factor of Zuckerman's Sensation Seeking Scale. Overall, the study revealed that extreme athletes perceive the external world differently than traditional athletes and that extreme athletes are more adept at being flexible, being spontaneous, and adapting to situations.


*Keywords:* Myers Briggs Type Indicator, Zuckerman's Sensation Seeking Scale, Extreme Sports

Traditional vs. Extreme Athletes: An Exploration of Personality Indicators

The pervasiveness of sport in various cultures throughout human history is well evidenced and Americans are no exception. Each year millions of Americans participate in sports that have had a long tradition in the United States, such as football, baseball, basketball, softball, and volleyball among others. These sports can be referred to as "traditional" sports that have been absorbed into American culture and educational institutions. Traditional sports are often regarded as team sports, where the team's performance may be of higher value than one's individuality. Despite the many long traditions in American sport, Adams (2012) indicated that "traditional sports are facing an increasing challenge to draw in the country's young people as many are turning their backs on team activities in favor of individual and social sports" (p.1).

The differences in choice of sport are increasingly evidenced in extreme sport participation. According to Damiani (1998), extreme sports are defined as sports that tend to produce a profound surge of excitement while requiring the athlete to assume significant physical risks. These might include whitewater kayaking, mountain biking, snowboarding, rock climbing, skiing, and skydiving among others. In some extreme sports, the athlete is required to perform at a high rate of speed, be subject to significant effects of gravity, or exposed to dangers arising from performance with minimal safety equipment (Lerner & Lerner, 2007). For Brymer & Oades (2008), extreme athletes can relate their experiences as personal transformations that have the potential to become permanent. These transformations can increase a participant's personal fulfillment in the sport and leave them with a sense of achievement from overcoming fears and or injuries (Lerner & Lerner, 2007).

## Personality Indicators

*Myers Briggs Type Indicator (MBTI)*

The MBTI is among the most popular personality tests in the psychological literature and has been used by researchers for nearly 60 years (Quenk, 2009). The MBTI contains four continuums and each is anchored by two personality types totaling eight factors: Extroversion & Introversion, Intuition & Sensing, Thinking & Feeling, and Perceiving & Judging. *Extraversion & Introversion* deal with the attitudes or orientations of energy. Extroverts prefer to direct energy mainly toward the outer world of people and objects. Introverts tend to direct their energy mainly toward the inner world of experiences and ideas (Quenk, 2009).

The continuum of *Intuition & Sensing* pertains to the functions or processes of perception. Sensors focus mainly on what can be perceived by the five senses, where as an intuitor focuses on perceiving patterns and interrelationships (Quenk, 2009). The *Thinking & Feeling* continuum describes the functions or processes of judgment. Thinkers base conclusions on logical analysis with a focus on objectivity and detachment. Feelers base conclusions on personal or social values with a focus on understanding and harmony. The final continuum, *Perceiving &*, *Judging* describes one's attitudes or orientations to the outer world. Judgers tend to prefer decisiveness and closure in matters whereas perceivers prefer flexibility and spontaneity when dealing with matters of the outer world (Quenk, 2009). *Perceiving* also implies a dislike for imposed structure, methodical planning, and organizing minute details. These four continuums of the MBTI, composed of eight factors, provide the structure in determining one's personality type. In all, there are 16 potential personality types evidenced by the MTBI.

*Zuckerman's Sensation Seeking Scale (ZSSS)*

A lesser known but well tested personality measure is Zuckerman's Sensation Seeking Scale (ZSSS). Zuckerman defined sensation seeking as "the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of

such experience" (Cowmeadow, 1995, p.1). There are four factors that make up the ZSSS: Thrill & Adventure Seeking, Experience Seeking, Disinhibition, and Boredom Susceptibility.

The *Thrill & Adventure Seeking* factor measures the desire to engage in physical activities that provide unusual sensations and experiences, such as mountain climbing, skydiving and scuba diving (Zuckerman, 2007). The *Experience Seeking* factor measures the desire to seek sensations and new experiences through the mind and the senses, through activities such as music, art, and traveling. The *Disinhibition* factor measures the desire to seek sensations involving others by way of hedonistic ventures such as wild parties, sexual promiscuity, and drinking. The last factor, *Boredom Susceptibility*, measures one's aversion to monotonous conditions and the resulting restlessness that occurs when confined to those conditions. This also implies a dislike of people who are not exciting or interesting, even if they are relatable to the person (Zuckerman, 2007). These four factors can by analyzed individually or by combining the factor means for an overall Sensation Seeking score.

## Purpose

The purpose of this research was to explore the personality indicators of traditional and extreme sport athletes. The following questions guided this study:

R1: Is there a difference between traditional and extreme athletes across measures of the MBTI and ZSSS?

R2: Is there a difference between high-sensation seekers and low-sensation seekers across measures of the MBTI?

R3: What factors most influenced traditional and extreme sport participation?

R4: Is there a difference between high-skill and low-skill athletes across measures of the MBTI and ZSSS?

R5: What pattern exists among the correlations of the MBTI and ZSSS factors?

## Methods

### Participants

An online snowball sample was conducted by creating a link to the survey instrument on *SurveyMonkey.com*. The study invitation and link to the questionnaire were posted on *Facebook.com* from October 22, 2012 to November 19, 2012. Respondents were encouraged to send the questionnaire link to fellow athletes and friends involved in sports. In all, 202 athletes participated in the study; however, 53 athletes failed to complete the questionnaire in its entirety and were eliminated from analysis. The remaining athletes (n=149) were analyzed.

Respondents ranged in age from 18 to 48 years. Of the 149 athletes surveyed, 69.1% reported participation in a "traditional" sport, while 30.9% reported participation in an extreme sport. The three most common traditional sports reported in the sample included volleyball, soccer, and basketball. For extreme sports, the three most commonly reported were skiing, motocross, and snowboarding. Of the traditional and extreme athletes, 40.3% categorized their sport participation as personal recreation, 23.5% as varsity sport, 20.8% as club sport, 8.1% as intramural sport, and 7.4% reported being a professional in the sport.

### Measures

The instrument for this study was a 33-item questionnaire assessing personality indicators and influences among traditional and extreme athletes. Two pre-existing instruments were used to measure the personality indicators: a modified version of the Myers Briggs Type Indicator (Martin, 1997), and Zuckerman's Sensation Seeking Scale (Zuckerman, 2007). These personality indicators were structured by a series of Likert items on a six point scale. The six-point scale was chosen over a dichotomized (yes or no) response set so that there would be sufficient variation

for means testing. For the MBTI, two items were used to reflect each factor (e.g., *Introversion* and *Extroversion* make two factors) of each of the four continuums, resulting in eight factor scores with six points of variation to be analyzed. To assess an athlete's primary influence to participate, five rank order items were created for the instrument. Last, respondents were asked to report on basic demographic information and their perceived level of skill in their sport on a 100-point scale.

**Procedures**

In order to answer three of the five research questions, three independent samples t-tests were conducted across MBTI and ZSSS scores. The grouping variables for t-testing included the traditional vs. extreme dichotomy, high vs. low-sensation seekers, and high-perceived vs. low-perceived skill in the sport. The sensation seeking and perceived skill dichotomies were determined by conducting a median split of the distribution of those scores. In order to determine the most highly ranked influence between traditional and extreme athletes, the mean score of each influence was calculated. Last, a correlation matrix of the MBTI and ZSSS factors was calculated to determine potential patterns between each measure.

## Results

For the first research question, a paired samples t-test was conducted to assess mean differences between traditional and extreme athletes across MBTI and ZSSS scores. Results indicated that only MBTI factors *introversion* and *perceiving* scores were significantly higher among extreme athletes. Extreme athletes also scored significantly higher across all four factors of ZSSS. The most notable mean difference was in *disinhibition* (the desire for hedonistic sensations) scores. See Table 1 for mean comparisons between traditional and extreme athletes.

For the second research question, a paired samples t-test was conducted to assess mean differences between high-sensation seekers and low-sensation seekers across MBTI scores. In order to differentiate high from low-sensation seekers, a median split was performed on the distribution of ZSSS scores. Respondents scoring above the median were considered high-sensation seekers while those scoring below the median were grouped as low-sensation seekers. Means testing of these groups revealed that five of the eight MBTI factors were significantly different. See Table 2 for mean comparisons between high- and low-sensation seekers. The largest difference in mean scores appeared between the MBTI factors of *perceiving* and *judging*. Specifically, the high-sensation seekers reported higher *perceiving* scores while the low-sensation seekers reported higher *judging* scores in their behaviors.

For the third research question, respondents were asked to rank the factors that most influenced participation in their respective sports. Visual inspection of the rank scores revealed that traditional athletes were more influenced by school (47.6%) than extreme athletes (13.0%). Extreme athletes were more influenced by the media (43.5%) than were the traditional athletes (17.5%). Both types of athletes were most influenced by their parents to participate in their sports. See Figure 1 for ranked influences between traditional and extreme athletes.

For the fourth research question, a paired samples t-test was conducted to assess mean differences between high and low-skilled athletes across MBTI and ZSSS scores. In order to differentiate high and low levels of athletic skill, a median split was performed on the distribution of self-reported skill scores. Athletes scoring above the median were considered high skilled while those scoring below the median were considered low-skilled. Means testing of these groups indicated that three (*introversion*, *thinking*, and *feeling*) of the eight MBTI factors were significantly different. See Table 3 for mean comparisons between high and low-skilled

athletes. The largest difference in the MBTI mean scores appeared in factors *thinking* and *feeling*. The high-skilled athletes reported higher *thinking* scores while the low-skilled athletes reported higher *feeling* scores. Mean testing of the ZSSS scores revealed a significantly higher *thrill/adventure seeking* score among the high-skilled athletes. See Table 3 for mean comparisons between high and low-skilled athletes.

In order to assess the relationship between the MBTI indicators and ZSSS factors, multiple Pearson product-moment correlation coefficients were computed. See Table 4 for MBTI and ZSSS Factor Correlations. Visual inspection of the matrix revealed that the MBTI indicator *perceiving* was the most correlated with each ZSSS factor and that these positive moderate relationships were significant at the .01 level. Consequently, the MBTI indicator *judging* (the opposite of *perceiving*) demonstrated a moderate but negative significant relationship with each ZSSS factor. The MBTI continuum *Intuition* & *Sensing* also revealed significant but weak correlations with each ZSSS factor at the .05 level of significance. Visual inspection of the matrix revealed a number of positive and negative relationships that were statistically significant but the *perceiving* indicator was clearly most related to sensation seeking behaviors. See Table 4 for MBTI and ZSSS Factor Correlations.

## Conclusions

The purpose of this research was to explore the personality indicators of traditional and extreme sport athletes. Significantly higher mean scores across *introversion* and *perceiving* for extreme athletes is an indication that they tend to direct their energy towards their inner world of experiences/ideas more so than traditional athletes. The extreme athletes also scored significantly higher across all four factors of the ZSSS, providing support for Zuckerman's contention that high-sensation seekers are more likely to participate in high-risk sports to satiate

their desire (2007). According to Goma-i-Freixanet (2004), significantly higher mean scores for *disinhibition* among extreme athletes is common; they can be very unconventional and unusually celebrative.

Analysis of the differences between low and high-sensation seekers revealed that high-sensation seekers reported higher *perceiving* while the low-sensation seekers reported higher *judging*. These differences appear to support Zuckerman's (2007) notion that "impulsivity" is common among high-sensation seekers, for they are of the "non-planning sort" (p. 42). This parallels explanations of perceivers as being spontaneous and emergent; they work best "with constant variety and freedom" and can "plunge into a current task without detailed plans, trusting that a solution will emerge regardless of the starting point" (Quenk, 2009, p.13).

Means testing between levels of skill revealed that high-skilled athletes reported higher *thinking* scores and the low-skilled athletes reported higher *feeling* scores. These differences seem to indicate that as athletes develop more skill, they are more focused on completing the tasks and objectives of the sport and are less concerned with *feeling*, compassion or tact. Conversely, low-skilled athletes may have an underdeveloped knowledge base of the sport and are compelled to rely on their *feeling* (the desire for harmony, open communication and compassion) in order to progress and develop knowledge (Martin, 1997).

For the ZSSS, significantly higher *thrill/adventure seeking* scores among the high-skilled athletes substantiated Zuckerman's position that the desire for thrill and adventure can be fulfilled in optimal performance and triumph in sport (2007). Davis and Mogk (1994) also found that *thrill/adventure seeking* was higher in samples of athletes and sports enthusiasts compared to non-athletic participants.

Visual inspection of the correlation matrix revealed that the MBTI continuum of *perceiving* & *judging* was clearly most correlated with all ZSSS factors. More specifically, *perceiving* is positively related to sensation seeking while *judging* is inversely correlated. *Perceiving* & *judging* pertains to one's orientation to the outer world as a whole, which is not to be confused with the *thinking* & *feeling* continuum, which pertains to one's orientation (harmonious or detached) to other people. This unique orientation to the outer world among extreme athletes indicates that they are generally better at multitasking, being flexible, being spontaneous, and adapting to situations as opposed to organizing them. They are more open to new experiences, are less methodical in organizing, and dislike decisions being made for them (Martin, 1997).

These findings substantiated previous research on impulsivity (Zuckerman, 2007), high-risk sports (Goma-i-Freixanet, 2004), and sensation seeking in athletes and non-athletes (Gundersheim, 1987 & Schroth, 1995). In summary, it was concluded that extreme athletes do have higher sensation seeking drives than their traditional counterparts. Extreme athletes also visualize and deal with the external world and its structures in different ways than traditional athletes. *Perceiving* appears to be the most important MBTI indicator for distinguishing traditional from extreme athletes.

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Table 1

*Mean Comparisons Between Traditional and Extreme Athletes Across MBTI & ZSSS Scores*

| | Traditional | | Extreme | | | | |
|---|---|---|---|---|---|---|---|
| Measure | Mean | SD | Mean | SD | *t* | *df* | *p-value* |
| MBTI | | | | | | | |
| *Extraversion* | 4.68 | 1.03 | 4.35 | 1.09 | 1.78 | 147 | 0.08 |
| *Introversion* | 3.22 | 1.15 | 3.73 | 1.22 | -2.43 | 147 | 0.02 |
| *Intuition* | 4.30 | 0.69 | 4.36 | 0.90 | -0.43 | 147 | 0.67 |
| *Sensing* | 4.46 | 0.75 | 4.41 | 0.80 | 0.32 | 147 | 0.75 |
| *Thinking* | 3.84 | 0.84 | 3.89 | 0.82 | -0.38 | 147 | 0.71 |
| *Feeling* | 4.04 | 0.96 | 3.84 | 1.03 | 1.20 | 147 | 0.23 |
| *Perceiving* | 4.13 | 0.93 | 4.78 | 0.73 | -4.23 | 147 | 0.00 |
| *Judging* | 3.91 | 1.31 | 3.53 | 1.09 | 1.72 | 147 | 0.09 |
| ZSSS | | | | | | | |
| *Thrill/Adventure Seeking* | 4.25 | 1.38 | 4.83 | 1.10 | -2.51 | 147 | 0.01 |
| *Disinhibition* | 3.61 | 1.54 | 4.53 | 1.16 | -3.62 | 147 | 0.00 |
| *Experience Seeking* | 4.79 | 0.97 | 5.16 | 0.97 | -2.17 | 147 | 0.03 |
| *Boredom Susceptibility* | 4.44 | 0.94 | 4.79 | 1.02 | -2.08 | 147 | 0.00 |
| *Overall SS Score* | 4.27 | 0.97 | 4.83 | 0.86 | -3.36 | 147 | 0.00 |

Table 2

*Mean Comparisons Between Low- and High-Sensation Seekers Across MBTI Scores*

| | Low-Sensation Seeking | | High-Sensation Seeking | | | | |
|---|---|---|---|---|---|---|---|
| Measure | Mean | SD | Mean | SD | *t* | *df* | *p-value* |
| MBTI | | | | | | | |
| *Extraversion* | 4.34 | 1.10 | 4.82 | 0.97 | -2.81 | 147 | 0.01 |
| *Introversion* | 3.44 | 1.13 | 3.32 | 1.25 | 0.63 | 147 | 0.53 |
| *Intuition* | 4.10 | 0.77 | 4.54 | 0.70 | -3.67 | 147 | 0.00 |
| *Sensing* | 4.27 | 0.77 | 4.62 | 0.72 | -2.91 | 147 | 0.00 |
| *Thinking* | 3.89 | 0.82 | 3.82 | 0.86 | 0.57 | 147 | 0.62 |
| *Feeling* | 3.92 | 0.96 | 4.03 | 0.96 | -0.73 | 147 | 0.47 |
| *Perceiving* | 3.89 | 0.80 | 4.77 | 0.83 | -6.56 | 147 | 0.00 |
| *Judging* | 4.18 | 1.18 | 3.41 | 1.21 | 3.95 | 147 | 0.00 |

Table 3

*Mean Comparisons Between Low- and High-Skilled Athletes Across MBTI & ZSSS Scores*

| | Low Perceived Skill | | High Perceived Skill | | | | |
|---|---|---|---|---|---|---|---|
| Measure | Mean | SD | Mean | SD | *t* | *df* | *p-value* |
| MBTI | | | | | | | |
| *Extraversion* | 4.55 | 1.03 | 4.60 | 1.10 | -0.28 | 147 | 0.78 |
| *Introversion* | 3.18 | 1.09 | 3.58 | 1.26 | -2.08 | 147 | 0.04 |
| *Intuition* | 4.31 | 0.75 | 4.32 | 0.78 | -0.09 | 147 | 0.93 |
| *Sensing* | 4.33 | 0.75 | 4.55 | 0.76 | -1.78 | 147 | 0.08 |
| *Thinking* | 3.65 | 0.78 | 4.06 | 0.84 | -3.11 | 147 | 0.00 |
| *Feeling* | 4.15 | 0.85 | 3.80 | 1.03 | 2.22 | 147 | 0.03 |
| *Perceiving* | 4.28 | 0.97 | 4.38 | 0.88 | -0.65 | 147 | 0.52 |
| *Judging* | 3.93 | 1.23 | 3.66 | 1.27 | 1.29 | 147 | 0.20 |
| ZSSS | | | | | | | |
| *Thrill/Adventure Seeking* | 4.20 | 1.38 | 4.60 | 1.23 | -2.13 | 147 | 0.04 |
| *Disinhibition* | 3.69 | 1.64 | 4.11 | 1.30 | -1.74 | 147 | 0.09 |
| *Experience Seeking* | 4.91 | 0.95 | 4.90 | 1.01 | 0.09 | 147 | 0.93 |
| *Boredom Susceptibility* | 4.49 | 0.98 | 4.60 | 0.98 | -0.67 | 147 | 0.50 |
| *Overall SS Score* | 4.32 | 1.03 | 4.57 | 0.89 | -1.54 | 147 | 0.13 |

Table 4

MBTI and ZSSS Factor Correlations

| Factors | M | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MBTI | | | | | | | | | | | | | |
| 1. *Extraversion* | 4.58 | 1.00 | | | | | | | | | | | |
| 2. *Introversion* | 3.38 | -.52** | 1.00 | | | | | | | | | | |
| 3. *Intuition* | 4.32 | .20* | .08 | 1.00 | | | | | | | | | |
| 4. *Sensing* | 4.44 | .12 | .06 | -.06 | 1.00 | | | | | | | | |
| 5. *Thinking* | 3.85 | -.13 | .21** | -.06 | .28** | 1.00 | | | | | | | |
| 6. *Feeling* | 3.98 | .22** | .08 | -.01 | .07 | -.23** | 1.00 | | | | | | |
| 7. *Perceiving* | 4.33 | .09 | .03 | .13 | .15 | -.07 | .13 | 1.00 | | | | | |
| 8. *Judging* | 3.80 | .16 | -.11 | -.17* | .35 | .13 | .20* | -.39** | 1.00 | | | | |
| ZSSS | | | | | | | | | | | | | |
| 9. *Thrill Seeking* | 4.43 | .16* | -.04 | .21* | .30** | .00 | -.03 | .45** | -.33** | 1.00 | | | |
| 10. *Disinhibition* | 3.90 | .20* | .00 | .23** | .20* | .00 | .03 | .51** | -.35** | .55** | 1.00 | | |
| 11. *Exp. Seeking* | 4.91 | .12 | -.02 | .33** | .20* | -.08 | .06 | .51** | -.30** | .54** | .50** | 1.00 | |
| 12. *Bore.Suscept.* | 4.55 | .29* | -.11 | .23** | .23* | -.04 | .14 | .41** | -.18** | .48** | .54** | .65** | 1.00 |

Note: *Statistically significant at $p<0.05$; **Statistically significant at $p<0.01$

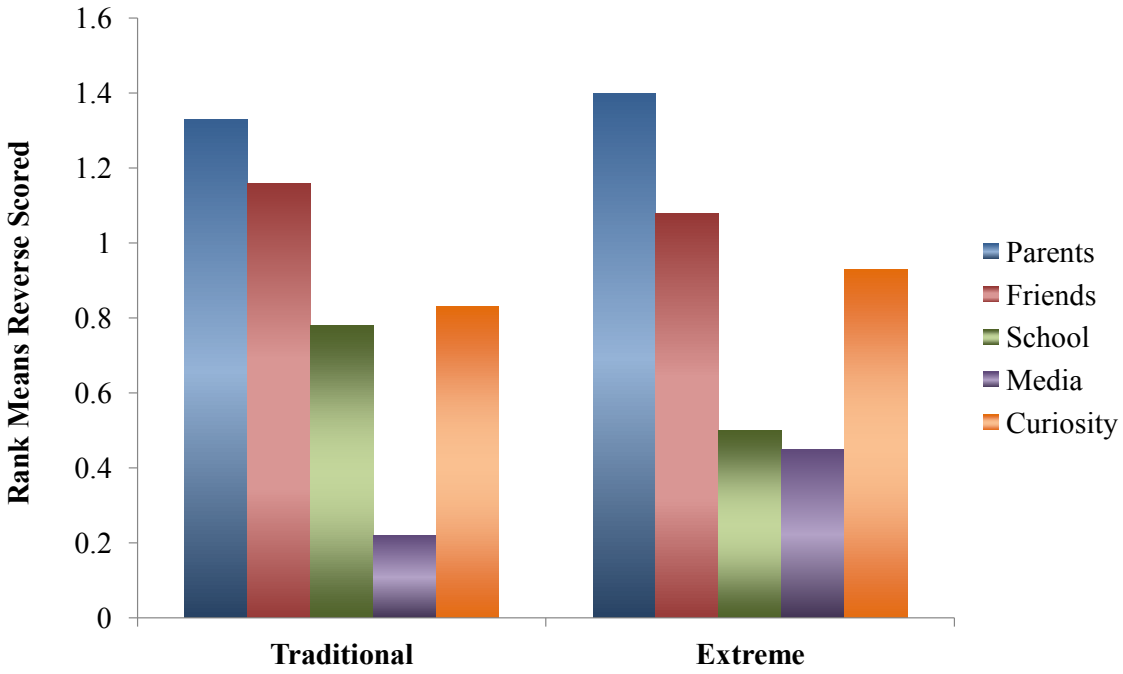


*Figure 1*. Ranked Influences Between Traditional and Extreme Athletes. The higher the score, the greater the influence.