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Wilderness Courage Scale (WCS)

Piotr Próchniak

Abstract

This article presents a new tool—the *Wilderness Courage Scale*. The Wilderness Courage Scale is a scale that diagnoses undertaking activity in dangerous natural environments, despite personal fears. The validity of the Wilderness Courage Scale was tested using exploratory and confirmatory factor analyses. The results of factor analyses verified the one-factor structure. The questionnaire's internal consistency and intercorrelations were also tested. The Wilderness Courage Scale correlates with sensation seeking, some personality traits, and coping forms. The author discusses the findings in regard to the Wilderness Courage Scale as an instrument to measure exploration of dangerous natural environments. However, further studies need to be carried out in other sample groups to further validate the scale.

Keywords: courage, wilderness, extreme environment

Introduction

A wilderness is an unmodified, undisturbed, uncultivated region, such as forests, mountains, the sea, or deserts that have not been significantly affected by human activities (Ardahan & Lapa, 2010; Kliskey, 1998). The wilderness gives people an opportunity to experience the most beautiful and the darkest moments of their lives. In the wilderness people can become aware of their strong points as well as their limitations, and experience great joy and tremendous fear. Experiencing hurricanes, snow, cold, or heat, the force of gravity, and battling against the power of water awakens mechanisms which remain latent in everyday life. We can experience pain and even fear for our lives. The initial happiness resulting from fulfilling the dream of exploring the wilderness may turn into a struggle for survival. This is common knowledge for mountain climbers, sailors, and travelers to the Arctic or Antarctic. Sometimes such activities are called “the art of suffering” (O’Connell, 1993).

Various constructs have been created to study the motivated performance of individuals in extreme environments and to predict their involvement: flow (Csikszentmihalyi, 1990), sensation seeking (Gomà-i-Freixanet, 1991; Zuckerman, 1994), self-efficacy (Bandura, 1977; Llewellyn & Sanchez, 2008; Llewellyn, Sanchez, Asghar, & Jones, 2008), or intrinsic motivation (Celsi, Rose, & Leigh, 1993; Deci & Ryan, 2000).

Ewert and Hollenhorst (1989) state that the risk associated with the real possibility of serious injury or even death is at the “core” of exploration of the wilderness. Perceived risk is subjective and varies from person to person (Demirhan, 2005; Plummer, 2009; Robinson, 1992). People who perceive the level of risk in the wilderness as high can subjectively experience fear (Priest, 1990, 1999). Thus fear can be one of the main elements involved in outdoor adventure (Brymer & Oades, 2009; Ewert, 1988; Schneider & Hammit, 1995; Schneider & Stanis, 2007; Slinger & Rudestam, 1997). Moreover, Cater (2006) states that risk is not the major issue in “play” with their own fears.

At times activity in the wilderness requires great endurance, perseverance, overcoming one’s concerns, or confronting one’s fear. However, if despite experiencing personal fears, people are able to continue their activity in the natural environment, they probably display an old virtue—courage.

COURAGE

Courage has many different meanings and definitions (Greitemeyer, Osswald, Fischer, & Frey, 2007; Rachman, 1990; Woodard & Pury, 2007). In ancient times courage was one of the primary virtues. For Aristotle courage was linked to a soldier’s courage. For this philosopher true courage lay in the acceptance of patience and even death. Saint Thomas stated that courage can be characterized by a combination of endurance and patience. For this philosopher also, true courage lay in the acceptance of patience and even death. His treatment of courage was similar to Aristotle’s statement. Plato had a different point of view. For him courage was not limited to physical harm or to overcoming fear in battle. It meant

controlling one's own desires and pleasures (Houser, 2002). Today researchers agree that courage includes fulfilling a noble goal and enduring despair in the face of personal fears (Dahlsgaard, Peterson, & Seligman, 2005; Rachman, 1990; Woodard & Pury, 2007).

Researchers have proposed different types and forms of courage. Putman (1997) distinguishes three different types of courage: physical, moral, and psychological. Physical courage is an act which carries the risk of physical harm or even death, moral courage concerns acts of moral obligation which incur the risk of disapproval on the part of society, psychological courage occurs with acts which involve the risk of losing psychological stability. Lopez, O'Byrne, and Peterson (2003) distinguished vital courage. Vital courage is accepting negative information about one's self with cognitive, emotional, and even existential risks. It seems that courage in the wilderness can include all of the above forms of courage.

We can distinguish different types of courage and different components of courage. Walton (1986) distinguishes three aspects of courage: careful presence of mind and deliberate action, difficult, dangerous, and painful circumstances, and a morally worthy intention "at the agent's personal risk and suffering" (p. 3). Klein and Napier (2003) state that courage consists of five characteristics: candor, purpose, rigor, risk, and will. Rachman (1990) states that courage consists of three components, namely: behavior, perceived risk associated with carrying out the behavior, and the presence of fear. It seems that performance in extreme environments can include all of the above components of courage.

Courage can be studied in different contexts. Kilmann, O'Hara, and Strauss (2010) analyzed courage in organizations. Martin (2011) conducted a study of courage in an academic context. Courage can also be studied in a traditional sports context (Konter & Ng, 2012). Brymer and Oades (2009) conducted interviews with BASE jumpers, rafters, solo rope-free climbers, and extreme mountaineers. In these interviews participants acknowledged that they faced fears associated with these risky activities. The authors of that study conclude that extreme sports people are courageous.

Several scales have been used for measuring courage. Schmidt and Koselka (2000) created a short scale to measure general courage. Woodward (2004) created a courage scale based on items which included different and potentially stressful life events. Konter and Ng (2012) constructed a Sports Courage Scale. This scale diagnoses courage in different domains of sport. Factor analyses extracted five basic factors for this scale: determination, mastery, assertiveness, venturesome, and self-sacrifice behavior. Woodward and Pury (2007) developed a scale to measure different types of courage (the Woodward–Pury Courage Scale—WPCS-23). It consists of a four-factor structure: work/employment courage, patriotic, religious, or belief-based

courage, social–moral courage, and independent courage and family-based courage. Greitemeyer *et al.* (2007) created the Civil Courage Scale. Factor analyses revealed three factors in this scale: civil courage in the workplace, physical violence, and racism. Norton and Weiss (2009) developed twelve rationally derived items to assess self-perceived courageousness (Courage Measure). Factor analysis revealed a single-factor structure for the scale.

However, in the literature there have been no instruments that measure activity in threatening natural environments linked to courage. For example, the Thrill and Adventure Seeking subscale assesses the search for adventure and risk in natural environments. Unfortunately, this scale does not include items linked to outdoor activity despite having fear (Zuckerman, 1994). The Wilderness Novelty Seeking Scale (WNSS) assesses curiosity and novelty seeking in the wilderness. The WNSS is also not linked to courage (Próchniak, 2014). In this context the aim of the study is to suggest a new scale—the *Wilderness Courage Scale* (WCS).

Study 1

Construction of the Wilderness Courage Scale

The author obtained institutional review board approval for the study.

Courage in the natural environment must have been a characteristic of primitive peoples. The natural environment constituted on the one hand a source of food and basic materials to build shelter, and on the other hand a significant source of danger: sudden changes in the weather, threats from wildlife, and risks connected with exploring any given terrain, e.g. forests or mountains. The necessity of survival in a hostile natural environment meant that people were inclined to explore, even at the potential risk to their lives (Buss, 1983).

Courage also played an important role in cultivating ceremonies, rites, and cultural rituals. Initiation rites of tribes living in the South Pacific, in which young boys jumped from tall trees with their legs bound with an earlier plaited rope, sailing on wooden boards, which for native Hawaiians was a sign of respect and unity with the ocean (called Hoau), or deep diving in the Balua tribe may constitute these peoples' expression of courage. Participation in these rituals allowed a person to change their social status and role (Laman, 2001; Quammen, 2001).

While for the tribes discussed above contact with the natural environment had a spiritual character, nowadays the decision to enter into the wilderness is usually motivated by curiosity (Próchniak, 2017), sensation seeking (Zuckerman, 1994), flow (Csikszentmihalyi, 1990), or self-efficacy (Bandura, 1977; Llewellyn & Sanchez, 2008).

Realization of the above motives in dangerous natural environments requires taking risk, endurance, perseverance, or confronting one's fear. If despite experiencing fear

people are able to continue their efforts in the wilderness, they are courageous people.

In the context of research on courage, many definitions for this phenomenon have been created. These include cognitive, volitional, affective, and motivational components, as illustrated in this example: a willful, intentional act, involving objective substantial risk, a noble, good, or worthy end, endurance, persistence, and fear (Dahlsgaard *et al.*, 2005; Gould, 2005; Shelp, 1984; Woodard, 2004). Researchers have suggested different types and forms of courage: physical, moral, civil, vital, psychological, or existential courage (Putman, 1997; Rate, Clarke, Lindsay, & Sternberg, 2007).

Previous studies indicate that courage includes the following dimensions: sacrificing, taking action, facing threats/fears/challenges and overcoming obstacles, endurance, and good, moral, and noble goals (O'Byrne, Lopez, & Peterson, 2000; Rate *et al.*, 2007; Woodard, 2004; Woodard & Pury, 2007). These dimensions were the inspiration for this study, but in this study courage in the wilderness is defined as performance in the natural environment despite personal fears.

The above definition was the base for the construction of the new scale, the WCS.

METHOD

Participants

In order to examine the factor structure of the newly developed scale, data were collected from two separate groups of participants.

In the first group a total of 250 complete surveys were obtained. Seven were excluded because participants did not respond correctly to the validity item and 243 surveys were retained. There were 120 females (49%) and 123 males (51%). Participants' age ranged from 19 to 29 ($M = 23.45$; $SD = 6.20$). 68% of the participants were from cities and 32% from villages.

The respondents in this group practiced the following outdoor activities: mountain climbing (9.80%), skiing (12.60%), snowboarding (4.50%), orienteering (9.40%), mushroom hunting (12.40%), fishing (8.50%), running (34.90%), cycling (40.20%), kayaking (34.60%), sailing (8.60%), windsurfing (4.90%), scuba diving (5.90%), skydiving (2.50%), paragliding (1.90%), horse riding (14.30%), and others (27%) (the sum of percentages is higher than 100% because some respondents practiced more than one activity). Data obtained from this sample were examined using exploratory factor analysis (EFA).

In the second group a total of 226 complete surveys were obtained. Five were excluded because participants did not respond correctly to the validity item and 221 surveys were retained. There were 110 females (49%) and 111 males (51%). Participants' age ranged from 19 to 32 ($M = 24.30$;

$SD = 6.50$). 65% of the participants were from cities and 35% from villages.

The respondents in this group practiced the following outdoor activities: mountain climbing (8.40%), skiing (10.40%), snowboarding (3.80%), orienteering (10.00%), mushroom hunting (14.50%), fishing (9.30%), running (39.70%), cycling (42.10%), kayaking (36.70%), sailing (9.00%), windsurfing (5.10%), scuba diving (6.10%), skydiving (1.90%), paragliding (1.60%), horse riding (15.80%), and others (34%) (the sum of percentages is higher than 100% because some respondents practiced more than one activity). Data obtained from this sample were examined using confirmatory factor analysis (CFA).

Procedure

Inspiration to create this scale came from a variety of sources: literature on courage, literature on adventure recreation, literature on environmental behavior, and the existing scales that diagnose courage. Work on the questionnaire began with creating a list of 14 statements describing courage in the wilderness. The statements accounted for a basic definition of courage as activity despite personal fears in the natural environment.

The list of 14 statements was sent to 3 experts. Each expert had a university degree in the social sciences and each expert had personal experiences in outdoor activity (one expert was an instructor of climbing and two experts were instructors of sailing).

Statements were evaluated by the experts. To assess the quality of the construct experts were asked to use a 5-point Likert-type scale (very poor, poor, fair, good, very good) to independently determine the extent to which the initial pool of 14 items (a) reflected the definition of courage (relevancy) and (b) were clearly and simply written (clarity). Items were retained if the average rating on relevancy and clarity was 4.0 or higher. Eleven statements were qualified for further study.

Next, the respondents were approached by a researcher in different outdoor recreations. The researcher provided them with a general verbal introduction to the study. They were then asked to volunteer to complete the survey. Those who agreed completed the questionnaire anonymously.

The respondents received the list of 11 statements with the following response scale: 1, strongly disagree; 2, disagree; 3, neither agree nor disagree; 4, agree; 5, strongly agree. Moreover, the questionnaire included following questions: age, gender, place of living, and kind of outdoor recreation practiced.

Data obtained from this sample were examined using EFA. Prior to factor extraction the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity (BTS) were applied to the data.

Based on the results obtained in the EFA, CFA was conducted on scale results of the second group of participants.

Table 1.
Statements of the Wilderness Courage Scale, mean, standard deviation, factor, item-total correlations, and Cronbach's α .

No.	Items	M	SD	F	I-T
1	I go in for the wilderness even when I suspect the possibility of an accident	2.32	1.28	0.66	0.52
2	I go in for the wilderness in such natural places which are attractive yet cause fear in me	2.05	1.22	0.65	0.51
3	I seek thrilling situations in the wilderness	2.53	1.35	0.76	0.63
4	Fear cannot stop me from getting to know interesting places in the wilderness	2.46	1.37	0.78	0.66
5	I explore places in the wilderness that cause stress	2.14	1.33	0.64	0.50
6	I go in for the wilderness in such natural places which are attractive yet cause fear in other people	3.00	1.34	0.61	0.47
7	I search for places in the wilderness which will allow me to confront my fears	3.03	1.32	0.70	0.57
	Variance (%)			48	
	Cronbach's α			0.81	

Results

Exploratory factor analysis

An EFA was conducted with the *maximum-likelihood method of parameter estimation* on the initial pool of 11 items to identify a probable factor structure. Results of the scree plot, eigenvalues, and item factor loadings were used to determine the factor solution (Cudeck, 2000).

The KMO index was found to be 0.89 which indicates that the sample was appropriate for factor analysis. Additionally, BTS reached statistical significance $\chi^2(55) = 818,243, p < 0.001$. The KMO and BTS results indicated that our data satisfied the psychometric criteria for factor analysis to be performed.

Inspection of eigenvalues and the scree plot revealed a marked gap between the first and remaining factors (Factor 1 eigenvalue, 6.62; Factor 2 eigenvalue, 0.94). This score suggests a single-factor solution. EFA using the *maximum-likelihood method of parameter estimation* also showed a strong single-factor solution. Thus, only those items loading on the first factor were retained. Seven statements were qualified to the final version of the WCScale (Table 1).

Confirmatory factor analysis

I performed a CFA of the single-factor model revealed by exploratory analysis on data from a new sample of 221 individuals, using maximum-likelihood estimation. The fit indices of the model indicated that the correspondence between the single-factor model and the sample covariance matrix was satisfactory: $\chi^2(14) = 36.07; p = 0.01$. GFI = 0.953; AGFI = 0.905; CFI = 0.957; RMSEA = 0.05. All seven items of the scale were significantly related to the latent factor (all $p < 0.001$).

Study 2

Wilderness Courage Scale and adventure recreation

The purpose of this study was to provide criterion validity of the WCS. I analyzed how the scale functions

among people with high versus low experience in outdoor adventure, and I hypothesized that individuals with high experience in outdoor adventure would report higher scores on the dimension of the WCS than people with low experience in outdoor adventure.

METHOD

Participants

Two groups of people filled out the WCS questionnaire. The first group (only men) was highly experienced in outdoor adventure ($N = 38$). The people who qualified for this group were climbers ($M_{\text{age}} = 26.60; SD = 6.50$). The second group (only men) had only sporadic contact with wild nature ($N = 60$) ($M_{\text{age}} = 23.40; SD = 3.40$). (Each participant in this group was asked about personal experiences in exploration of wild nature. Moreover, each participant in this group was asked about recreational preferences.)

Procedure

The author was searching for groups of people who had personal experiences in outdoor adventure. Therefore, the people who qualified for the outdoor adventure groups were recruited from adventure clubs in Poland. In these groups, all individuals had experience in climbing (Alps, Tatras). The second group preferred activity in city environments.

Prior to testing the researcher asked individuals in the second group how much time they spend in green areas and what sort of leisure time they prefer. Individuals who prefer spending their leisure time in city surroundings were qualified for the study.

The researcher informed the participants about the goals of the study and handed out the questionnaire. The participants were asked to fill out a written consent, to carefully read the directions of the scale, and to raise their hands if they had any questions. The participants filled in the questionnaire individually.

Table 2.
Adventure recreation and the Wilderness Courage Scale.

	Climbers (a) N = 38		Controls (b) N = 60		<i>t</i> (96)
	M	SD	M	SD	
WCS	3.43	0.91	2.61	0.92	5.20* (a)–(b)

* $p < 0.01$

Results

The WCS distinguishes between individuals who have undertaken outdoor risky activity and people who prefer running. Climbers scored higher on the scale than the control group ($p < 0.01$; Table 2).

Study 3

Correlations with other measures

Mayer (2000) noted that “measure must show that it is similar enough to other concepts to be recognizable, but different enough to be worth studying” (p. 49). Thus, the aim of the present study was to establish the validity of the WCS.

Performance in the wilderness is often associated with extensive physical involvement. In this context, the psychic traits rooted in biology—temperament and traits of personality—play an important role. These constructs should correlate to act of courage in the wilderness.

Performance in threatening natural environments can be interpreted from the temperamental theory of Zuckerman (1994). Zuckerman’s theory posits that people who undertake risky activities are characterized by a need, heightened in intensity, to seek novel, complex, and thrilling experiences. Research on sensation seeking has shown scores to be associated with engagement in high-risk sports (Gomà-i-Freixanet, 1991; Próchniak, 2011; Straub, 1982; Zuckerman, 1994). In this study the WCS was correlated with sensation-seeking forms.

Wilderness can be predicted by means of personality traits. In this study, the WCS was correlated with five personality traits, namely: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. A review of the research on the relationship between adventure activity and personality traits indicates that the correlation between these groups of variables is of relatively moderate strength. The strongest associations seem to be with two traits: extraversion and neuroticism. Neuroticism negatively correlates to wilderness exploration and, in turn, extraversion correlates positively (Egan & Stelmack, 2003; Goma-i-Freixanet, 1991; Watson & Pulford, 2004).

Wilderness phenomena are characterized by significant inconsistency and unpredictability. As such, the question of how courageous individuals cope under these circumstances

would appear to be an intriguing one. Concepts and studies in the field of psychology of stress inspire the search to determine how people cope with wilderness conditions. The research output in the area of psychology of stress is immense and dates back to the beginning of the twentieth century (Selye, 1963). Included in this output are studies on the experience, assessment, and perception of stress, its determinants, and consequences to mental well-being. Also of significance is the scientific stream focused on the ways in which people cope with stress (Lazarus, 1990).

Two forms of coping are usually distinguished, namely problem-solving strategies and emotion-focused strategies (Greenglass, 2002; Skinner, Edge, Altman, & Sherwood, 2003). The next distinction in coping identified in source literature is between active and avoidance coping (Endler & Parker, 1990; Carver & Connor-Smith, 2010). A review of the research on the relationship between exploration of wilderness and coping indicates that, in particular, problem-solving strategies play an important role (Manning & Valliere, 2001; Miller & McCool, 2003; Schneider & Hammit, 1995; Schneider & Stanis, 2007).

On the basis of the previous research, it was hypothesized that courage in wilderness would positively correlate to sensation seeking and extraversion; next, courage in wilderness would negatively correlate to neuroticism; and finally courage in wilderness would positively correlate to problem coping.

METHOD

Procedure

All participants were recruited from the urban university which took part in the study. The students practiced some form of outdoor recreation. Each student was briefed on the general aims of the research and instructed how to administer the questionnaires. The participants were asked to fill out a written consent, to carefully read the directions of the scales, and to raise their hands if they had any questions. The study was anonymous.

Participants

The instrument was distributed to 237 respondents: 120 women (51%) and 117 men (49%). Participants’ age ranged from 19 to 26 ($M_{\text{age}} = 22.55$; $SD = 3.60$). The respondents practiced different forms of outdoor activities: mountains climbing (11.70%), skiing (13.20%), snowboarding (7.50%), cycling (43%), orienteering (7.30%), mushroom hunting (9.80%), fishing (7.40%), kayaking (32.00%), sailing (5.70%), windsurfing (2.50%), scuba diving (3.90%), running (38.20%), skydiving (3.20%), paragliding (1.60%), horse riding (16.40%), and others (34%) (the sum of percentages is higher than 100% because some respondents practiced more than one outdoor activity).

Measures

The Wilderness Courage Scale

Sensation Seeking Scale IV (SSS IV) (Zuckerman, 1994)

The Polish version of the SSS IV consists of 68 items comprising 6 scales: general tendency towards sensation seeking (G), thrill and adventure seeking (TAS), experience seeking (ES), disinhibition (DIS), boredom susceptibility (BS), and intellectual stimulation requirement—(I) (Oleszkiewicz-Zsurs, 1986).

In this study four scales of the SSS IV were used: TAS (Cronbach's $\alpha = 0.79$), ES (Cronbach's $\alpha = 0.75$), DIS (Cronbach's $\alpha = 0.73$), and BS (Cronbach's $\alpha = 0.70$).

NEO-FFI (McCrae & Costa, 1990)

The third questionnaire was the NEO-FFI in the Polish adaptation by Zawadzki, Strelau, Szczepaniak, and Śliwińska (1998). The NEO-FFI measures five major dimensions: neuroticism (N), extroversion (E), openness to experience (O), agreeableness (A), and conscientiousness (C). Alpha coefficient reliability for the Polish version of the NEO-FFI: N (Cronbach's $\alpha = 0.80$), E (Cronbach's $\alpha = 0.77$), O (Cronbach's $\alpha = 0.68$), A (Cronbach's $\alpha = 0.68$), C (Cronbach's $\alpha = 0.82$).

Coping Inventory for Stressful Situations (CISS) (Endler & Parker, 1990)

CISS was used in the Polish adaptation of Strelau, Jaworowska, Wrześniewski, and Szczepaniak (2005). CISS measures how people cope with the stresses of everyday life (Endler & Parker, 1990). Response is to a 5-point scale. WCQ measures three main coping strategies: problematic strategies (Cronbach's $\alpha = 0.78$), emotional strategies (Cronbach's $\alpha = 0.82$), and avoiding strategies (Cronbach's $\alpha = 0.90$).

Results

Table 3 presents the results for correlation between SSS IV, NEO-FFI, CISS and the WCS.

The WCS correlates positively with sensation seeking and openness to experience and negatively with agreeableness. The other personality traits do not correlate with the WCS. The WCS correlates positively also with problematic coping and avoiding coping.

General Discussion

The WCS provides a new tool for diagnosing behaviors associated with the natural environment. Findings from the author's research provide evidence that the WCS is a

reliable and valid scale. EFA and CFA were performed in order to test the factor structure of the WCS. The items included in the WCS have been shown to load on a single factor. Cronbach's α coefficient equaled 0.81. It can be concluded that the reliability level was satisfactory.

Researchers studying performance in the wilderness, especially connected with the possible loss of health or life, usually highlight the significance of taking risk in exciting activities in the natural environment. The author's scale constitutes a tool for diagnosing involvement in the wilderness which is connected with taking challenges and risks in the natural environment, but also highlights the role of personal fears or even suffering while participating in activities in close contact with nature. The issue of fear and suffering has so far been absent from scales diagnosing activity in natural environments.

The WCS was shown to discriminate between groups of climbers and people who are not interested in risky activity. This means that the WCS may more precisely identify people who can undertake activities in dangerous natural environments. It is also possible that the scale could be an alternative for the TAS scale proposed by Zuckerman (1994).

Previous scales exploring the intensity of seeking and preferences for adventure in natural environments include statements which usually concern specific activities, e.g. skydiving, climbing, or waterskiing. The author's scale is designed to eliminate references to specific outdoor disciplines, enabling a more precise and objective comparison of people undertaking diverse outdoor activities.

Another advantage of the author's scale is that the statements do not include declarations of willingness or inclination towards a given activity, even a risky one (e.g. *I would like to climb*). Instead of declarations regarding preferred outdoor activities the statements usually concern events, which refer to individual experience, or specific behaviors. This approach is meant to eliminate individual

Table 3.

Correlation between the SSS IV, NEO-FFI, coping scales and the WCS.

Variables	WCS
TAS	0.49*
ES	0.42*
DIS	0.41*
BS	0.34*
Extraversion	0.03
Neuroticism	-0.11
Agreeableness	-0.16*
Conscientiousness	0.00
Openness to experience	0.16*
Problematic coping	0.17*
Emotional coping	0.06
Avoiding coping	0.24*

* $p < 0.05$

declarations with respect to taking outdoor risk which do not necessarily translate into actual undertaking of risky outdoor activity.

The WCS correlates to sensation seeking. This means that courageous activity in threatening natural environments probably maintains a positive attitude towards new experiences in nature which demand risk taking. Courageous people believe in their own ability to cope with the most difficult of natural hazards. To them, untamed nature is a place for experiencing adventure.

The WCS correlates to agreeableness and openness to experience. Agreeableness means that the individual is influenced by other people. People who score high on this dimension are perceived as kind, sympathetic, cooperative, and warm. Low agreeableness is often characterized by skepticism. People who score low on this dimension are also more likely to compete than to cooperate, and to experience anger (McCrae & Costa, 1990). Anger is a primary, natural, mature emotion and has functional value for survival. It can mobilize psychological resources to action in the face of problems (Novaco, 2000). This means that anger can be a motivational factor for acts of courage. In this context the relationship between agreeableness and courage seems more clear and understandable.

Openness to experience is connected with novelty seeking, intellectual needs, high cultural thinking, and a sense of humor (McCrae & Costa, 1990). Positive correlation between openness to experience and courage could indicate that courageous people can seek new sensory and cognitive-intellectual experiences in the wilderness.

Stronger correlations occur with the SSS than with the personality scales (openness to experience and agreeableness). This result suggests that the WCS is more closely associated with seeking behaviors that involve outdoor adventure than with seeking experiences associated with obtaining new knowledge, or with intellectual and aesthetic curiosity in natural environments.

Positive correlation was also observed between the WCS and problem-solving strategies of coping. Problematic coping signifies an activity aimed at eliminating a stressful problem and solving it. Therefore, courageous people probably foster the minimizing of stress in natural environments (Lazarus & Folkman, 1984). The obtained correlation may suggest that in dangerous natural environments courageous people are probably able to think rationally, control their emotions, plan their way out of difficult situations, and believe that they are able to cope with natural dangers using their own resources.

Positive correlation was also observed between the WCS and avoiding-solving strategies of coping. Avoiding coping strategies are mechanisms characterized by efforts to evade having to deal with a stressor (Carver & Connor-Smith, 2010). This result suggests that courageous people in natural risky environments do not concentrate their attention on possible problems in the wilderness.

Limitations and Future Directions

An important limitation of the actual study is that the participants were mainly young people. This fact limits the generalization of the results. In further research, it will be important to assess not only young people but other age groups. Further studies should also assess the role of gender. The current study did not measure the role of gender for the courageous exploration of dangerous natural environments.

The relationship of the WCS with the perception of danger assessment of risk in the wilderness should be pursued for better understanding. Previous findings in the field indicate that engaging in exploration of dangerous natural environments is positively related to minimizing the natural hazards (Demirhan, 2005). It might be that an underestimated risk could even encourage the undertaking of hazardous challenges. However, the outcome of that same underrated danger may well be tragic.

Performance in the wilderness can be viewed not only through the prism of its potential for rest, relaxation, relief from the daily grind of life, and the opportunities it presents for discovering new places and admiring the glories of nature, but also that it be considered a means of providing essential information as to how we respond to difficulties, whether we are tenacious in spite of adversities, and the limits of our endurance.

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