

**THE OUTDOOR SITUATIONAL FEAR  
INVENTORY: A NEWER MEASURE OF AN  
OLDER INSTRUMENT**

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This study examined the relationship of two methods of scaling the Outdoor Situational Fear Inventory-- continuum scaling and the more easily scored certainty method of scaling. Although item-by-item correlations varied widely, overall and subscale score relationships were strong. The data also suggested ways to clarify interpretations of earlier continuum scaled OSFI scores.

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**Introduction**

Whether using fear to stimulate learning or using instruction to reduce fears, most outdoor pursuits educators are familiar with the positive and negative impacts of students' fears. Those studying the dynamics of fear in outdoor recreation experiences and environments have most frequently used an Outdoor Situational Fear Inventory (OSFI) to identify, describe, and measure changes in the fears of participants of outdoor recreation. Drawing from the literature of other disciplines, Ewert (1988, 1989) developed the original "situational fear inventory" to measure and describe social-based fears and physical- or environment- based fears of outdoor pursuits participants. After extensive use in studies with Outward Bound students and with input from researchers, outdoor instructors, and psychologists, the OSFI was revised for use in new studies of students in a college-sponsored outdoor education practicum (Ewert and Young 1992; Young and Ewert 1992).

Having an overall reliability, as measured by Cronbach's alpha, of .94 (Ewert 1986), the OSFI and its associated research have been useful contributions to the work of researchers and practitioners alike. Nevertheless, important concerns and suggestions regarding its scaling have been expressed. The OSFI uses a "continuum scaling" method. Along a 10 centimeter line, anchored by the statements "not at all anxious" and "very anxious," subjects are to place a slash mark "at the point that best represents [their] level of concern for each item" (Ewert and Young, undated). Responses to each item on the instrument are literally measured, using a ruler. A portion of the OSFI is illustrated in Figure 1.

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*Directions:* All of us experience different types of anxieties in the outdoor environment. Place a slash (/) on each line at the point that best represents your level of concern for each item. There are no right or wrong answers. Consider the following example:

	<b>NOT AT ALL ANXIOUS</b>	_____	<b>VERY ANXIOUS</b>
<b>LIGHTNING</b> .....			
	<b>NOT AT ALL ANXIOUS</b>	_____	<b>VERY ANXIOUS</b>
<b>BEING HURT OR INJURED</b> .....			
<b>UNABLE TO CONTROL PHYSICAL ENVIRONMENT</b> .....			
<b>UNABLE TO CONTROL SOCIAL ENVIRONMENT</b> .....			
<b>EXPOSURE TO UNEXPECTED SITUATIONS</b> .....			
<b>MAKING WRONG DECISIONS</b> .....			
<b>LETTING MYSELF DOWN</b> .....			
<b>LETTING OTHERS DOWN</b> .....			
<b>TASK TOO DEMANDING</b> .....			
<b>NOT HAVING ENOUGH PHYSICAL STRENGTH</b> .....			
<b>NOT HAVING ENOUGH PERSONAL ABILITY</b> .....			
<b>FALLING/SLIPPING</b> .....			

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Figure 1. Excerpt from the continuum-scaled OSFI (not to scale).

The continuum-scaled OSFI poses several difficulties. First, the continuum scale is labor-intensive to measure. Thirty-three ruler measurements are made on each instrument. Second, continuum scaling scores may create an artificial sense of precision. For example, if a respondent felt an identical level of fear about "being hurt or injured" (item 1) and "falling/slipping" (item 11), the respondent is unlikely to draw the slash mark at exactly the same point on the continuum. OSFI item scores may range from 0 to 100, but some variations in scores may reflect respondents' imprecise markings more than the instrument's measurement sensitivity. Third, and most troublesome, OSFI continuum scores are difficult to describe. At what point along the continuum between "not at all anxious" and "very anxious" do students' levels of fear become noteworthy? In previous research, rarely have any mean OSFI items scores been above 50. Somewhat arbitrarily, Young and Ewert (1992) have regarded scores over 40 as "elevated."

To ameliorate these difficulties, Young, Quinn, and Steele (in press) modified the OSFI by substituting certainty scaling (Warren, Klonglan, and Sabri 1969) for continuum scaling. This method requires subjects to make two decisions. First, subjects indicate whether they agree or disagree with a statement (e.g., "I am anxious or fearful about lightning") by circling the "A" or the "D" on the instrument. Second, subjects circle a number between 1 and 5 to indicate the strength of their agreement or disagreement. Numerical values ranging from 1 to 10 are then assigned to the responses (D5 = 1; A5 = 10). This OSFI with certainty scaling has a Cronbach's alpha of .93.

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*I am fearful or anxious about...*




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Figure 2. Sample OSFI item using certainty scaling.

### Purpose

The purpose of this study was to see if the more descriptive certainty-scaled OSFI could be used to shed new light on the less descriptive continuum scores. Toward that goal, this study first sought to describe the relationship between certainty-scaled and continuum-scaled OSFI item scores. Second, by using the "agree" or "disagree" element of the certainty-scaled instrument to form groups, the researchers could describe and compare the means and distributions of continuum-scaled OSFI item scores of subjects who, on the other form, did or did not acknowledge being fearful about the item. Doing so might provide better basis for estimating the beginning point on the continuum scale where scores reflect subjects being fearful.

### Review of Literature

Fearful situations, both real and imagined, are strongly associated with being in wilderness and other primitive outdoor settings. Nash (1982) points out that even among wilderness devotees of recent times, ambivalence and anxiety recur. Ewert (1989b) notes that because risk and fear are fundamentally part of all human experience, they are also part of all outdoor experiences. He adds, however, that outdoor leaders must anticipate students' fears because "if ignored and permitted to reach dangerous levels, they can have a kind of paralyzing effect that is counterproductive from a teaching and learning perspective" (p. 44). Ironically, prior to the aforementioned studies by Ewert (1986, 1988) and Ewert and Young (1992), little was done to identify and describe the fears of outdoor program participants.

Fear is generally seen as a range of feelings from mild apprehension to panic that are associated with perceived threats, which are sometimes specific and tangible and other times elusive and indiscernible (Hauck 1975; Leary 1983). While some fears

are instinctual or reflexive (e.g., a sudden clap of thunder), others are learned (e.g., not meeting group expectations) (Schacter and Singer 1962; Rachman 1974; Ewert 1988). People have been found to have a dispositional level fear called "trait anxiety," which is resistant to change (Spielberger 1966). In contrast, "state anxiety" refers to fears arising in response to specific events and contexts (Zuckerman 1976).

A variety of instruments that measure anxiety are described in the psychological literature. Most of these instruments rely on direct observations of subjects, physiological responses, or self-report questionnaires. Noting an imperfect relationship among systems of measurement, Rachman (1978) suggests avoiding reliance upon a single measure. Still, Rachman (1978) argues that self-reported indices of perceived fear provide a practical method of making preliminary estimations of subjects' fears. He states that "...self reporting of fear is indispensable and at the same time potentially misleading" (p. 23). Because research on situational fears of outdoor program participants is in its infancy, single instrument studies are necessary until various forms of measurement are developed, refined, and validated.

The certainty method of scaling was developed by Warren, Klonglan, and Sabri (1969) in an attempt to reduce measurement errors in sociological research. The researchers conducted a study comparing and contrasting conventional types of Likert scaling with certainty scaling formats similar to that depicted in Figure 2. The certainty method was deemed reliable and favored because it achieved the measurement sensitivity of an eleven point Likert scale in a format subjects and researchers preferred.

Although the original certainty method incorporated a neutral or undecided response option, instructions in this study called for a forced-choice because of the nature of the anxiety construct. Levinger (1977) reports that people are rarely devoid of an attitude. Given the personal nature of fears and anxieties, it was believed that providing a neutral response option would too often furnish subjects with an opportunity to choose a "safe" or socially acceptable response when they did in fact have a directional feeling, however slight, about the items.

### Methods

Over an entire season, 162 participants in a college outdoor/adventure program completed the continuum-scaled and the certainty-scaled versions of the OSFI on the first day of their two-week courses. Sequence effects were controlled by randomly assigning students to groups that would complete the instruments in opposite order in separate locations.

Because the certainty-scaled OSFI yields scores between 1 and 10 with a definite beginning point for being fearful (i.e., > 6), a strong correlation (Pearson  $r$ ) between certainty-scaled scores and continuum-scaled scores would permit a simple way of clarifying the degree of fear represented by continuum-scaled scores.

The "agree/disagree" nature of the certainty-scaled OSFI also permitted the formation of two groups for each OSFI item-- (1) those who "agreed" or were fearful about the item and (2) those who "disagreed" or were not fearful of the item. Forming these groups enabled a first-time examination of frequency distributions and other descriptive statistics of the continuum-scaled item scores of for fearful and nonfearful subjects.

### Findings

Overall scores from the two versions of the instrument were strongly related ( $r = .77, p < .001$ ). As seen in Table 1, item-by-item correlations ranged from a weak .394 to a strong .782 and were all significant at the .001 level.

Table 1. Item-by-item correlations of certainty-scaled and continuum-scaled Outdoor Situational Fear Inventories.

Item	.r <sup>a</sup>
Being hurt or injured	.664
Unable to control physical environment	.569
Unable to control social environment	.560
Exposure to unexpected situations	.419
Making wrong decisions	.523
Letting myself down	.637
Letting others down	.644
Task too demanding	.456
Not having enough physical strength	.782
Not having enough personal ability	.582
Falling or slipping	.658
Confrontation with others	.599
Going unrecognized in the group	.618
Not performing up to group expectations	.548
Not fitting in with the group	.672
Not performing up to leader expectations	.648
Being sexually harassed	.680
Bad Weather	.693
Poisonous plants	.759
Poisonous snakes	.758
Darkness	.683
Dangerous animals	.738
Being bothered by insects	.656
Becoming sick	.656
Fast or deep water	.701
Becoming lost	.610
Getting dirty	.462
Inadequate clothing	.394
Not enough training	.616
Insufficient food	.654
Course not meeting my expectations	.480
Not getting my money's worth	.708
Hot or cold temperatures	.637

p. < .001 for all items.

Tables 2 and 3 show descriptive statistics of the fearful and nonfearful groups' continuum OSFI scores for social-based fears and physical-based fears respectively. Examining those tables, one observes that in every instance the means of fearful and nonfearful groups differed by an average of 30 points. Striking is the fact that the minimum scores of both fearful and nonfearful groups were almost always less than 10 and the maximum, almost always over 80.

Without showing histograms for all 33 items, one effective way to compare the distributions of fearful and nonfearful groups' scores is to examine quartile distributions. Included in Tables 2 and 3 are the 25th, 50th, and 75th percentile scores of each group for each item. The average quartile distributions of each group for social-based, physical-based, and all OSFI items are shown in Table 4. The emerging pattern, high-lighted Table 4, is that 75% of fearful subjects have continuum OSFI scores above 30. Likewise, 75% of nonfearful subjects have continuum scores below 30. These figures might suggest that the earlier decision to regard scores above 40 as "elevated" (Ewert and Young 1991) should be revised to a score of 30.

Table 2. Description of fearful and non-fearful groups' social-based continuum-scaled OSFI scores.

Expressed Fear	Group	n	Mean	S.D.	Percentile			Min.	Max.
					25th	50th	75th		
Unable to Control Social Environment	Fearful	59	47.5	28.8	25	46	66	2	97
	Non-fearful	102	22.4	16.2	9	20	29	0	68
Exposure to Unexpected Situations	Fearful	60	48.6	21.8	33	50	65	2	95
	Non-fearful	100	29.1	20.8	14	22	44	0	95
Making Wrong Decisions	Fearful	76	48.9	20.6	33	49	64	2	94
	Non-fearful	85	27.1	16.1	13	26	41	0	65
Letting Self Down	Fearful	64	51.8	24.5	31	51	72	1	95
	Non-fearful	97	23.9	18.7	11	18	33	0	86
Letting Others Down	Fearful	83	59.1	23.5	41	61	78	1	97
	Non-fearful	77	25.5	17.2	12	20	42	0	68
Task Too Demanding	Fearful	42	48.5	21.7	31	51	64	10	96
	Non-fearful	119	26.9	17.6	12	24	41	0	79
Confrontation With Others	Fearful	26	48.2	22.0	33	49	66	3	84
	Non-fearful	135	20.1	17.3	8	15	26	0	84
Going Unrecognized in Group	Fearful	40	48.8	24.3	28	50	64	6	93
	Non-fearful	121	19.7	15.5	8	15	29	0	70
Not Performing Up to Group Expectations	Fearful	66	49.6	24.5	27	49	72	4	98
	Non-fearful	95	24.1	19.1	11	19	32	0	82
Not Fitting In With Group	Fearful	57	51.9	25.1	35	56	71	5	97
	Non-fearful	102	19.1	15.5	9	14	26	0	76
Not Performing Up to Leader Expectations	Fearful	74	51.3	23.5	33	51	70	6	96
	Non-fearful	86	20.3	15.7	9	16	28	0	68
Being Sexually Harassed	Fearful	15	51.4	29.8	24	52	73	2	96
	Non-fearful	146	10.5	15.0	2	5	12	0	96
Not Getting Money's Worth	Fearful	24	61.4	26.0	40	64	84	16	96
	Non-fearful	134	16.4	16.5	6	10	24	0	92
Course Not Meeting Expectations	Fearful	27	46.6	24.5	23	48	66	4	92
	Non-fearful	130	19.6	17.8	6	14	28	0	94
Mean of Social Fears Items	Fearful	50.9	51.0	24.3	31.2	51.9	69.6	4.6	94.7
	Non-fearful	109.2	21.8	17.1	9.3	17.0	31.0	0.0	80.2

Table 3. Description of fearful and non-fearful groups' physical-based continuum-scaled OSFI scores.

Expressed Fear	Group	n	Mean	S.D.	Percentile			Min.	Max.	
					25th	50th	75th			
Unable to Control Physical Environment	Fearful	64	47.3	24.6	24	48	62	3	96	
	Non-fearful	97	25.8	19.6	13	20	31	0	85	
Bad Weather	Fearful	64	54.7	25.4	36	59	76	4	93	
	Non-fearful	96	21.8	19.2	8	18	30	0	90	
Being Hurt or Injured	Fearful	62	54.2	24.1	31	58	74	3	94	
	Non-fearful	99	21.3	16.2	11	17	26	0	84	
Poisonous Plants	Fearful	63	53.8	27.6	33	53	78	0	98	
	Non-fearful	98	17.4	14.4	7	15	24	0	75	
Poisonous Snakes	Fearful	87	64.0	27.6	41	73	87	0	99	
	Non-fearful	74	18.8	16.5	6	13	28	0	80	
Darkness	Fearful	21	57.7	22.9	47	54	75	8	97	
	Non-fearful	140	17.4	18.5	4	11	24	0	91	
Dangerous Animals	Fearful	72	59.3	25.6	42	63	83	0	98	
	Non-fearful	89	18.3	18.2	5	13	21	0	74	
Bothered by Insects	Fearful	98	53.6	25.3	37	56	71	0	99	
	Non-fearful	60	20.0	17.7	6	18	27	0	82	
Becoming Sick	Fearful	57	47.9	26.2	27	45	69	0	98	
	Non-fearful	100	19.5	16.6	6	17	30	0	64	
Fast of Deep Water	Fearful	46	53.3	22.6	42	54	70	2	98	
	Non-fearful	112	18.7	17.0	5	15	27	0	94	
Becoming Lost	Fearful	58	50.4	23.2	34	50	68	0	98	
	Non-fearful	100	22.2	19.9	6	18	34	0	83	
Getting Dirty	Fearful	17	37.9	28.3	13	43	53	1	98	
	Non-fearful	140	12.6	17.0	3	7	16	0	92	
Inadequate Clothing	Fearful	61	42.8	24.0	22	40	75	0	97	
	Non-fearful	97	22.2	20.0	8	16	34	0	90	
Not Enough Training	Fearful	56	50.4	23.7	33	48	70	0	98	
	Non-fearful	102	22.6	18.7	8	19	32	0	90	
Insufficient Food	Fearful	51	47.4	27.2	25	46	69	0	100	
	Non-fearful	107	17.6	17.3	5	12	25	0	92	
Cold/Hot Temperatures	Fearful	56	46.7	24.6	26	45	63	4	98	
	Non-fearful	102	18.1	17.1	6	13	26	0	95	
Mean of Physical Fears Items	Fearful	58.3	51.3	2	5.2	32.0	52.0	71.4	1.6	97.4
	Non-fearful	100.8	19.6	17.8	6.7	6.0	27.1	0.0	85.1	

Table 4. Averages of descriptive statistics of fearful and non-fearful groups' continuum-scaled OSFI scores.

Expressed Fear	Group	n	Mean	S.D.	Percentile			Min.	Max.
					25th	50th	75th		
Means for All Social Fears	Fearful	51	51.0	24.3	31	62	70	5	95
	Non-fearful	109	21.8	17.1	9	17	31	0	80
Means for All Physical Fears	Fearful	58	51.3	25.2	32	52	71	2	97
	Non-fearful	101	19.6	17.8	7	15	27	0	85
Mean for all SFI Items	Fearful	54.0	51.2	24.8	31.7	52.0	70.6	3.0	96.2
	Non-fearful	1004.0	20.6	17.4	7.9	16.9	28.9	0.0	82.0

Still, the temptation to use any continuum OSFI score to designate subjects as "fearful" should be approached cautiously. Not only is there considerable overlap in the distributions of fearful and nonfearful groups, there is also a difference in the size of these groups. On average, 34% of subjects comprised the "actually fearful" group (i.e., subjects who "agreed" that they were fearful or anxious about the item). In Table 5, by cross-tabulating the percentages of "apparently fearful" (i.e., OSFI >30) and "apparently nonfearful" (i.e., OSFI < 30) with those of the "actually fearful" and "actually nonfearful," one sees groups formed by continuum OSFI figures will exaggerate the percentage of fearful subjects.

Table 5. Percentages of fearful and nonfearful subjects based on continuum-scaling estimates and actual self-reports.

Actually	Continuum OSFI Score Estimates		
	Fearful (Above 30)	Nonfearful (Below 30)	Total
Fearful	25.5%	8.5%	34%
Nonfearful	16.5%	49.5%	66%
Total	42.0%	58.0%	100%

### Conclusions

On an item-by-item basis, continuum-scaled and certainty-scaled OSFI scores are often not strong predictors of one another. In instances where the relationships are strong, one might reinterpret continuum scores in light of their relationships to certainty score descriptors.

As reflected by the overlapping continuum-scaled OSFI scores of those who fear and do not fear a given situation, the continuum scaling of OSFI items does not present a clear beginning point for those who are fearful. Nevertheless, when using the continuum-scaled OSFI in future studies or in reinterpreting findings of earlier studies, one might use with caution the quartile distributions presented here to provide a better basis for estimating what constitutes an elevated score.

Despite its usefulness and reliability in depicting patterns and changes of situational fears for groups, the continuum-scaled OSFI remains difficult to interpret. The continuum scale is viewed too differently by individual subjects to permit firm descriptors to be attached to its OSFI scores. Further, the continuum-scaled OSFI does not permit accurate separation of fearful and nonfearful subjects into discrete groups. The certainty-scaled OSFI or a continuum-scale OSFI with clearer end- and mid- points may represent more promising and informative approaches to studying persons' fears about outdoor experiences.

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