

# Gender Differences in Sensation Seeking and Paranormal/Anomalous Experiences

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**Abstract:** Sensation seeking is the tendency to pursue sensory pleasure and excitement. A body of research indicates that sensation seeking may contribute to paranormal/anomalous experiences. Examination of relations between sensations seeking and paranormal beliefs has resulted in a limited body of research. This paper hypothesizes that both – sensation seeking and paranormal/anomalous experiences – will be significantly and positively correlated. Two samples of 446 females and 162 males ( $M_{Age} = 8.60$ ,  $SD = 4.65$ ) filled two questionnaires, *Sensation Seeking Scale* and a 10-item self-report inventory designed to collect information on spontaneous paranormal/anomalous experiences. An index of experiences (Index) was constructed to correlate with the sensations seeking. More than half have experienced different types of paranormal/anomalous experiences, mainly telepathy and déjà-vu. The main hypothesis was supported for both, males ( $p = .002$ , one-tailed) and females ( $p < .001$ ). Factor analysis showed that women tended to score higher than men, explaining the 6.5% of the variance. These findings also suggest that sensation seeking may have some utility in predicting subjects' psi performance.

**Keywords:** Gender differences, Paranormal/anomalous experiences, Paranormal beliefs, Sensation seeking.

## INTRODUCTION

Excitement-seeking is the tendency to pursue sensory pleasure and excitement, that is, people who go after novelty, complexity, and intense sensations, and who may take risks in the pursuit of such experience. Sensation seeking is “a personality trait defined by the search for experiences and feelings, that are varied, novel, complex and intense, and by the readiness to take physical, social, legal, and financial risks for the sake of such experiences. Sensation seekers are easily bored without high levels of stimulation [...] they love bright lights and hustle and bustle and like to take risks and seek thrills” [1, p.1303].

A growing body of research has indicated that sensation seeking may contribute to belief in paranormal/anomalous experiences though the literature is inconclusive regarding the precise relationships [1-4]. In fact, examination of relations between sensations seeking and paranormal beliefs has resulted in a limited body of research.

Zuckerman (1994) reports that high sensation seekers tend to be nonconforming in their thinking, and that high sensation seekers are often attracted to ideas that are outside the realm of normal science but do not tend to be spiritual or religious. Kumar, Pekala, and Cummings [3], concur with the Zuckerman's [5] assumption that sensation seekers naturally display an affinity for ideas that are not limited by prevailing scientific evidence, but additionally, they found that high sensation seekers report significantly more frequent

paranormal experiences (e.g., having an out-of-body experience, experiencing trance channeling) and report being more introspective (characterized as enjoying self-analysis and as understanding one's mind). This last result is consistent with another research demonstrating that paranormal believers are highly interested in the internal world of their own subjective experience [2], and also with the results of a study by Kuley and Jacobs [6], in which it was observed that high sensation seekers may be more prone to dissociative-like episodes, they also engage in many kinds of unusual behaviors (e.g., volunteering for psychology experiments involving drug use or hypnosis) and desire to experience altered states of consciousness and because of their search for intrapsychic novelty.

In a study involving transcendental meditation (TM training), Myers and Eisner [7] found that while sensation seekers tended to volunteer for the training, they are more inclined to search out intrapsychically arousing activities, but also be more prone to abandon these activities if they do not find these behaviors to be sufficiently stimulating. Smith, Johnson and Hathaway [8] found that Openness to Experience (measured by NEO-PI-R) and sensation seeking combined significantly in prediction of paranormal beliefs, supporting the hypotheses that the personality constructs of “openness” and seeking sensation predict partially belief in the paranormal, helping to understand divergent belief systems such as beliefs in the supernatural.

Kumar, Pekala, and Cummings [3] and Zuckerman [1] further theorize that belief in paranormal forces is potentially more exciting than the more dispassionate and rational view informed by the natural sciences. Along these lines, Gallagher, Kumar, and Pekala [9] found a significant positive

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relationship between sensations seeking and paranormal beliefs. Similarly, Tobacyk and Milford [4] theorized that increased levels of sensations seeking are connected to greater belief in paranormal/anomalous events because such beliefs offer greater excitement and mystery and thus potential stimulation than does a more normative world view. In support of this view, Kumar, Pekala, and Cummings [3] found that high sensation seekers reported stronger belief in paranormal/anomalous events and more frequent paranormal experiences than those low in sensation seekers. They also found that drug use did not moderate the relationship between belief and experience. They concluded that both drug use and paranormal/anomalous experiences are types of sensation seekers behaviors that may arise from a desire for adventure, variety, and novel experiences. Out-of-body experiences have also been found to relate to both sensation and danger-seeking [10]. Parra and Argibay [11] compared persons who claimed to be psychics, who had significantly higher scores on dissociation, absorption, and fantasy proneness than did the “non-psychic” group, however, scores on the Sensation Seeking scale were not significantly different; indeed, the non-psychic group (control) scored slightly higher, contrary to prediction.

However, other authors have not found a relation between sensations seeking and belief in paranormal/anomalous events [2]. Curtis and Wilson [12] failed to find a general significant relationship between sensations seeking and belief in paranormal/anomalous events, but did find the experience-seeking subscale of Zuckerman’s [5] sensations seeking scale to be the single best predictor of psi performance. Groth-Marnat and Pegden [13] also failed to demonstrate a relation between sensations seeking and belief in paranormal/anomalous events or to any of the paranormal belief.

Some correlates with factors associated with individual differences or biographical variables like childhood trauma [14], gender [15], and age [16]. Experiences related to paranormal have been rated stronger in sex correlates appeared to be stronger in women than in men [16, 17]. Since individuals who report a particular type of paranormal/anomalous experience typically also report experiences with other types of experience, this strongly suggests the importance of personality in the propensity to believe in supernatural phenomena.

Further, although there are number of researches about the relation of the sensation seeking and paranormal beliefs, an important theoretical question remains regarding the relative contributions of sensation seeking to paranormal/anomalous experiences. There are no published papers on sensation seekings and paranormal/anomalous experiences in relation with gender differences. Empirical research indicates that numerous factors impinge upon in some – maybe not all – paranormal experiences. In the present study, contributions of sensation seeking and paranormal/anomalous experience will be examined. It is hypothesized that both – sensation seeking and paranormal/anomalous experiences – will be significantly and positively, that is, that the count of paranormal/anomalous experiences will correlate positively with SSS scores for both genders. A factor

analysis will be carried out in terms to determine if the gender difference would contribute in some way interacting differently on both variables.

## METHOD

### Participants

The participants were 812 in all, from which 608 (74%) were usable questionnaires, 446 (74%) females and 162 (26%) males, ranging in age from 17 to 35 years ( $M = 8.60$ ,  $SD = 4.65$ ), adult students at the Universidad Abierta Interamericana in the Buenos Aires area, Argentina.

### Design and Questionnaires

The *Sensation-Seeking Scale* (SSS, [18]) is a 40-item self-report inventory developed in an attempt to provide an operational measure of the sensation-seeking trait. Each item of this scale requires a ‘true’ or ‘false’ response. The internal reliability of the SSS is good, with a Cronbach’s alpha coefficient of .87 and test-retest reliability has also been found to be acceptable for Spanish version [19]. Anomalous Experiences Questionnaire was used in the present study [20, 21, 22], which it is a 10-item self-report inventory. Each item has a likert scale, being 0= Never, 1= One time, 2= Sometimes and 3= Multiples times. The internal reliability of this self-report inventory is good, with a Cronbach’s alpha coefficient of .92, and test-retest reliability has also been found to be acceptable. An index, or count, of psi experiences (Psi Index) for each subject based on range of “yes” responses to questions about having had paranormal experiences was constructed, and then used to correlate with the SSS. The index had a range from 0= no experience to 10= having reported all the experiences listed.

## RESULTS

Data analysis was conducted using Spearman’s *Rho* correlations. *SPSS 22* was used for data management and statistical analysis. Table 1 shows the percentages and number of cases of experients and non-experients for ten paranormal/anomalous experiences. Over the 608 students polled, more than half say to have experienced – at the least sometimes – different types of paranormal/anomalous experiences, such as telepathy and déjà-vu (both 81%), and secondly sense of presence (76.2%), remote healing (67.6%), extrasensory perception in dreams (66.4%), mystical experiences (54.2%) and past lives recall (52.8%) (see Table 1).

The main hypothesis was that sensation seeking and paranormal/anomalous experiences would correlate significantly and positively, which was also supported for both, males ( $p = .002$ , one-tailed) and females ( $p < .001$ ) (see Table 2). In addition, telepathy, out of body experiences, and déjà-vu correlated significantly and positively, but Telepathy correlated significantly and positively just for males ( $p < .001$ ) and sense of presence correlated significantly and positively just for females ( $p < .002$ ).

**Table 1. Percentages and Number of Anomalous Experiences\*.**

Experiences	Yes			Yes (Total)	No
	One Time	Sometimes	Multiple Times		
1. ESP dreams	56 (9.2)	320 (52.6)	28 (4.6)	404 (66.4)	204 (33.6)
2. Telepathy	39 (6.4)	366 (60.2)	91 (15.0)	496 (81.6)	112 (18.4)
3. Perception of lights/energies	62 (10.2)	175 (28.8)	37 (6.1)	274 (45.1)	334 (54.9)
4. Out-of-Body Experiences	95 (15.6)	173 (28.5)	11 (1.8)	279 (46.2)	327 (53.8)
5. Past lives recall	62 (10.2)	212 (34.9)	41 (6.7)	315 (52.8)	293 (47.2)
6. Sense of Presence	35 (5.8)	314 (51.6)	114 (18.8)	463 (76.2)	145 (23.8)
7. Remote Healing (as healer)	44 (7.2)	274 (45.1)	93 (15.3)	411 (67.6)	197 (32.4)
8. Déjà-vu	27 (4.4)	372 (61.2)	89 (14.6)	463 (81.1)	114 (18.9)
9. Mystical experience	60 (9.9)	202 (33.2)	60 (9.9)	322 (54.2)	286 (45.8)
10. Apparitions	41 (6.7)	139 (22.9)	28 (4.6)	208 (35.5)	392 (64.5)

\* Results are presented in terms of percentages and number of cases (in parenthesis).

**Table 2. Correlation between Sensation Seeking and Anomalous Experiences for Males and Females\*.**

Paranormal/Anomalous Experience**	$r_s$ Males (n= 162)	p	$r_s$ Females (n= 446)	p
1. ESP dreams	.20	.01	.16	.001*
2. Telepathy	.31*	< .001	.04	.389
3. Perception of lights/energies	.04	.585	.07	.140
4. Out-of-Body Experiences	.37*	< .001	.16	.001*
5. Past lives recall	.16	.595	.73	.054
6. Sense of Presence	.19	.014	.14	.002*
7. Remote Healing	.15	.043	.003	.958
8. Déjà-vu	.30*	< .001	.17	< .001*
9. Mystical experience	.13	.089	.02	.618
10. Apparitions	.19	.014	.09	.042
Psi Index (1 to 10 marked experiences)	.14*	.002	.28	< .001*

\*  $p$  adjusted to multiple analysis (cut-off point  $p = .003$ )

\*\* Range: 0= Never, 1= One time, 2= Seldom, and 3= Multiples times.

Because evidence for gender differences in sensation seeking has been reported in the literature (for meta-analysis, see [23]), this possibility was examined in a factor analysis.

### Factor Analysis

Repeated measures 2×3 factor analysis was used. To explore gender differences (Males n= 162 and Females n=446),

an interaction effect of the sensation seeking and the Psi Index (the count of paranormal/anomalous) experiences was found. Data showed females scored higher than male on Psi Index (Female Mean = 12.60 and Male Mean = 10.74,  $Eta^2 = .018$ ). People who scored higher on Sensation Seeking tended to score high on Psi index (Low-SS= 9.80, Mid-SS= 11.84 and High-SS = 13.37;  $Eta^2 = .044$ ). An interaction effect was also found on Gender and Seeking Sensation [ $F(2/602) = 3.51$ ;  $p = .030$ ;  $Eta^2 = .012$ ].

## DISCUSSION

The correlations of sensation seeking and paranormal/anomalous experiences tended to be quite higher, specially on telepathy, out-of-body experiences, déjà-vu and the count of paranormal experiences (Psi Index). This finding appears consistent with previous research [3] in which positive relationships between sensation seeking and paranormal beliefs/experiences were obtained. In fact, factor analysis showed that women tended to score higher than men, explaining the 6.5% of the variance, although previous research revealed that men usually score higher than women on measures of sensation-seeking. Broughton [24] notes that individuals who are more open to internal sensations and experiences are more likely to report paranormal/anomalous events, because they may have either fostered a capability "to quiet the mind in a way that helps them be aware of extrasensorial information, or they may be more in touch with their inner mental processes" (p.111), making it more likely that subtle anomalous perceptions will reach the conscious awareness.

Zuckerman [5, 25] also observes that people's beliefs tend to be heavily influenced by the *Zeitgeist* of the era in which they live. During the late 1960s and early 1970s, when much of this research was conducted, there was a general interest in unusual beliefs and experiences. Therefore, the positive relations that were observed between sensation seeking and paranormal beliefs may have been somewhat inflated by this general predilection for the unusual that permeated this particular historical time period.

Moreover, several of the high correlations between sensation seeking and paranormal/anomalous experiences I obtained may be due to the fact that some paranormal events, such as out of body experiences and ESP are relatively rare [10, 22], or, as in the case of sense of presence, occur spontaneously and unexpectedly [20]. Hence, if sensation seekers engage in such potentially low-stimulation activities as out of body experiences, they may become bored. Then, as with the TM training in the study by Myers and Eisner [7], sensation seeking may abruptly quit these activities before any paranormal experience occur.

Although the correlations between Paranormal/Anomalous Experience and Seeking Sensation significant at the 0.05 level is reduced to nonsignificance by a Bonferroni correction on four experiences, I feel we would be remiss if I did not at least mention that this correlation is suggestive. Maybe sensation seekers may have found the anomalous-prone profile to be more congruent with their basic interest in the intrapsychic world of their own subjective experience than they would have otherwise, thus increasing their motivation to involve in supernatural events. These findings also suggest that sensation seeking may have some utility in predicting subjects' psi performance. Certainly, further empirical work concerning the effectiveness of sensation seeking as a predictor of ESP performance seems warranted.

Furthermore, as previously noted, this study apparently marks one of the few attempts to investigate seeking sensation as a function of personality. Schmeidler [26] also argues

that it is, in large part, extraverts' carefree and easygoing attitude that may help them to face paranormal/anomalous experiences more easily, because such individuals are less prone to feel inhibited when confronting a novel task. It is on line with the Eysenck's idea that extraverts' optimal level of arousal is higher than that of introverts, and as extraverts have strong neural inhibitory characteristics: Sensation seekers prefer stimulus variation to compensate for a loss of interest.

## CONFLICT OF INTEREST

The author confirms that this article content has no conflicts of interest.

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