

SENSATION SEEKING AMONG ADOLESCENTS:
A FACTOR ANALYSIS OF ZUCKERMAN'S QUESTIONNAIRE.

D. Delignières* & S. Sabas**

*UFR STAPS, University of Montpellier I, **UFR STAPS, University of Paris V

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INTRODUCTION

Sensation seeking is conceptualized as the need for individuals to reach and maintain an optimal level of arousal. Sensations seekers seem characterized by a chronic under-activation, and sight stimulations to increase their level of arousal to a point that is hedonically positive for them (Eysenck & Zuckerman, 1978).

It has been shown that sensation seeking was a pertinent predictor of a large range of behaviors, such as drug and tobacco use (Carton, 1994; Zuckerman, 1978; Zuckerman, Ball & Black, 1990), sexual behaviors (Zuckerman, 1978), unusual experiences seeking (Zuckerman, Bone, Neary, Mangelsdorff & Brustman, 1972). Zuckerman (1983) outlined the interest of sensation seeking in the domain of sport and leisure activities: particularly, some studies have shown that sensation seeking was a significant determinant of the choice of risky activities (Zaleski, 1984; Zuckerman, 1983) and of the adoption of dangerous behaviors in these activities (Connolly, 1981; Rossi & Cereatti, 1992).

At our knowledge, sensation seeking has never been studied from a developmental point of view. The only available result in this area is the observation of a gradual decrease in sensation seeking with age, among adults. This trend provides an interesting hypothesis to analyze the evolution of leisure involvement over the life-span (Iso-Ahola, Jackson & Dunn, 1994). But sensation seeking has been mainly studied among adults and few is known about this trait among children and adolescents.

On the basis of physiological and biochemical findings, Zuckerman has proposed a biological model of sensation seeking (Zuckerman, 1984, 1990). This hypothesis allows to predict a relative intra-individual stability of sensation seeking, from childhood to adulthood. Nevertheless no research at this time could confirm this hypothesis.

From a more qualitative point of view, Zuckerman has shown that sensation seeking was a pluri-dimensional concept. Four dimensions have been identified: Thrill and Adventure Seeking, Experience Seeking, Boredom Susceptibility, and Disinhibition. The specificity of the different subscales of sensation seeking emerges in their differential relationships with

some external criteria: for example Disinhibition seems more relevant to psychopathic behaviors, and Adventure Seeking seems highly related to a lack of fear of physical danger (Zuckerman, 1978).

This factorial structure has been confirmed for the French version of the scale (Carton, Lacour, Jouvent & Widlöcher, 1990; Carton, Jouvent & Widlöcher, 1992). Nevertheless this structure was obtained from adult samples, and no information is available neither on the structure of sensation seeking among children and adolescents, nor on the evolution of this structure during the development.

This question raises evident methodological problems, as the current version of the Sensation Seeking Scale is hardly usable with children (a lot of items are directly related to sex, alcohol, and drug). The construction of a child version of the questionnaire seems absolutely necessary. The present experiment constitutes a first step, and its goal was to analyze the factorial structure of the Sensation Seeking Scale in an intermediate sample, composed of adolescents.

METHOD

115 subjects (61 males and 54 females) aged from 16 to 18 have completed a French version of the Sensation Seeking Scale (Carton, Jouvent & Widlöcher, 1992). The intercorrelations matrix was then submitted to a principal component factor analysis, with varimax orthogonal rotation.

RESULTS

A four-factor solution was firstly required, with the aim to confirm the nature of the factors identified by previous studies. This solution explained 31.33% of the total variance. The first factor was constituted by 9 items with loadings highest than 0.4. These items were in most cases related to risk and adventure seeking, and this factor could be considered as equivalent to the Thrill and Adventure Seeking factor of Zuckerman. The item 35 ("I like to have new and exciting experiences and sensations even if they are a little frightened, unconventional and illegal") was originally located in the disinhibition factor, but could maybe give a more accurate representation of the nature of this Adventure factor among adolescents. Some items of the original Adventure Seeking factor did not appear in this model, such as "I would like to take up the sport of water skiing " (item 27) or "I enjoy many of the rides in amusement parks" (item 34), which clearly proves that this factor was related with adolescents to real danger and a relative illegality. More surprisingly, the item 4 ("I like to try

new foods that I have never tasted before"), from the original Experience Seeking scale, presented a significant loading (0.519) on this first factor.

The second factor was composed of 5 items with loadings highest than 0.4, which all appeared in the original Disinhibition factor. These items were all related to the use of alcohol and drug. The other items of the original factor, related to sexual experiences were clearly excluded of this factor, which appeared specifically centered on the need to "get high", by the use of more or less illegal ways. It could be noted that the item 18 ("Almost everything enjoyable is illegal or immoral") had also an interesting loading on this factor.

The third factor presented a new combination of items, two from the Boredom Susceptibility factor (item 2: "I find people who disagree with my beliefs more stimulating than people who agree with me", item 28 "I prefer friends who are excitingly unpredictable"), three from the Experience Seeking factor (item 11: "I would like to meet some persons who are homosexuals", item 14: " People should dress in individual ways even if the effects are sometime strange", item 32: " I would like to take off a trip with no pre-planned or definite routes, or timetable"), and one from the Disinhibition factor (item 26: "I prefer people who are emotionally expressive even if they are a bit unstable"). This third factor seemed clearly related to the seeking of originality and nonconformity. It focussed on the adoption of behaviors in opposition with "adult models", and seemed specific to our adolescent population.

The fourth factor involved four items of the original Disinhibition factor, related to sexual experiences, but also the item 34 ("I enjoy many of the rides in amusement parks", Thrill and Adventure Seeking) and the item 23 ("I prefer popular or light classical music to modern jazz or classical music", Experience Seeking). This factor focused more particularly on social and/or sexual enjoyable experiences. Three others items had loadings higher than 0.3, and allowed a more accurate representation of this factor: "I like to explore a strange city by myself, even if it means getting lost" (item 19), "I would like to take up the sport of water skiing" (item 27) and "Looking at someone's home movies or travel slides bores me tremendously" (item 38).

Six items did not obtain significant loadings on these factors. This could be attributed to some cultural problems of translation to French, and of disadaptation to our adolescent subjects.

TABLE 1: Four-Factor Solution, for the 40 Items of the Sensation Seeking Scale.

No	Description	Factor I	Factor II	Factor III	Factor IV
15	Danger	0.657			
16	Parachute	-0.632			
39	Scuba diving	-0.612			
1	Mountain climber	-0.594			
35	Experiences	0.588			
4	New foods	0.519			
30	Airplane	0.518			
29	High board	-0.511			
21	Skiing	0.415			
10	Surf-board	-0.358	0.312		-0.341
17	Artists	0.321			
22	Stimulants		-0.807		
6	Marijuana		0.680		
36	Couple of drinks		0.617		
13	Drugs		-0.617		
9	Drinking		-0.580		
5	Movie seen before		0.319		
18	Illegal		0.323		
26	Unstable people			-0.692	
14	Unusual dress			-0.576	
28	Unpredictable friends			0.552	
32	Pre-planning			0.502	0.377
11	Homosexuals			0.457	
2	Divergent beliefs			0.448	
31	Same old faces			0.370	
33	Sex in movies				0.499
12	Physically exciting				-0.489
20	Sexual experiences				0.465
34	Amusement parks				0.434
40	Uninhibited parties				-0.417
23	Popular music				0.416
19	Strange city				0.363
27	Water skiing				-0.358
38	Slides				0.318
3	Good night of rest				
7	Stay home				
8	Modern painting				
24	Discussions				
25	Crazy things				
37	Boring people				
Eigenvalue		3.836	3.241	3.061	2.393

Note: Loading higher than 0.4 are in bold and loading smaller than .3 have been omitted.

A three-factor and a five-factor solutions were also requested, but did not give satisfying models. In the three-factor solution the first factor appeared to be a combination of the Risk and Adventure Seeking and the Sexual and Social Experiences Seeking factors, and in the five-factor solution the Originality factor seemed dissociated into two factors: Non-conformity and Improvisation.

DISCUSSION.

The study of sensation seeking, from a developmental point of view, seems particularly interesting with the aim of understanding the antecedents of risk-taking, in the sports domain as well as in the domain of deviant social behaviours.

These results showed that the factorial structure of sensation seeking is slightly different between adolescents and adults. The first factor, related to the seeking of adventure, particularly in risky sports, seems identical among adults and adolescents. The Disinhibition, Experience Seeking and Boredom Susceptibility factors of Zuckerman's model appear to be reorganized into three new factors: Alcohol and Drug Use, Sexual and Social Experiences, and Originality and Non-conformity. This factorial model denotes a specific involvement of sensation seeking in adolescents.

This suggests that sensation seeking among adults could be conceived as the final step of a developmental process, and also that our model for adolescent constitute a median step of this process. More research is needed to analyse the structure of sensation seeking in children, and to understand the 'filiations' between these successive structures.

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