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Sensation Seeking in England and America: Cross-cultural, Age, and Sex Comparisons

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This study compared the factor structure of the Sensation-Seeking Scale (SSS) in English and American samples, and a new form of the SSS, applicable to both samples, was constructed. Three of the four factors showed good cross-national and cross-sex reliability. English and American males did not differ on the total SSS score, but American females scored higher than English females. Males in both countries scored higher than females on the total SSS score and on the Thrill and Adventure-Seeking and Disinhibition subscales. Significant age declines occurred for both sexes, particularly on Thrill and Adventure Seeking and Disinhibition.

The Sensation-Seeking Scale (SSS) was developed in an attempt to provide an operational measure of the construct *optimal level of stimulation* (OLS). The construct is an old one, first formulated by Wundt (1873) to explain the curvilinear relationship between affective reactions and intensities of stimulation. After lying dormant for about 80 years, the OLS resurfaced in the 1950s and early 1960s in many theories, including those of Berlyne (1960), Fiske and Maddi (1961), Hebb (1955), Leuba (1955), Malmo (1959), McClelland, Atkinson, Clark, and Lowell (1953), and Schlosberg (1954). Berlyne, Fiske and Maddi, and Hebb, Malmo, and Schlosberg suggested that the idea of an optimal level of arousal (OLA) could be substituted for OLS, since the arousal construct could accommodate stimulus parameters such as novelty versus constancy, and complexity.

The first SSS (SSS II; Zuckerman, Kolin, Price, & Zoob, 1964) was developed with the idea of predicting responses to the experimental situation of sensory deprivation. It consisted of a General scale derived from factor analyses of many diverse kinds of items reflecting a positive reaction to or desire for stimulating, exciting, and novel kinds of experiences. This scale was rather heavily loaded with the risk-taking kind of items that subsequently became part of the Thrill and Adventure-Seeking subscale.

The SSS II was initially applied in sensory deprivation experiments, and the idea of stable individual differences in OLS and OLA became the central postulate in the theory developed by Zuckerman (1969) to explain differences in reactions to sensory deprivation. In the late 1960s, interest shifted from sensory deprivation to the broader construct-validity implications of the OLS–OLA measure (Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman & Link, 1968). The SSS proved to have considerable validity for a variety of phenomena, ranging from design preferences to sexual and drug experiences and volunteering for unusual experiments or risky activities. Most of the research has been summarized in chapters by Zuckerman (1974, in press).

Studies by Farley (1967) and Zuckerman and Link (1968) suggested that there might be more than one factor of sensation seeking, and factor analyses were used in an attempt

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to discover what these factors might be. Zuckerman (1971) reported the "dimensions of sensation seeking" found in samples of male and female undergraduates in the Philadelphia area. Four factors were identified, and three of them showed good reliability in their loadings across the sexes. The fourth factor, Boredom Susceptibility, was not clearly defined in the female group.

The first factor was called *Thrill and Adventure Seeking* (TAS), and it contained items expressing a desire to engage in sports or other activities involving speed or danger. The second factor was called *Experience Seeking* (ES), and it represented the seeking of experience through the mind and senses, travel, and a nonconforming life-style. The third factor was labeled *Disinhibition* (Dis), which seemed to represent the desire for social and sexual disinhibition as expressed in social drinking, partying, and variety in sexual partners. The fourth factor, called *Boredom Susceptibility* (BS), represented an aversion to repetition, routine, and dull people, and restlessness when things are unchanging. Examples of the sensation-seeking parts of the forced-choice items can be seen in Table 2.

Recently, Stewart and MacGriffith (1975) factor analyzed Form IV of the SSS, using 156 American undergraduates as subjects. The authors did not analyze male and female data separately. They found factors corresponding to TAS, ES, and BS, but Dis did not emerge as one of the first four factors. The authors noted that four factors only accounted for a quarter of the total variance and suggested that with no clear basis for only examining four factors, a general scale might suffice. Only four factors were analyzed in the study by Zuckerman (1971) because only four showed some reliable resemblance between the male and female samples. Stewart and MacGriffith suggested that different factors might exist in males and females. This is a possibility, of course, but Zuckerman was looking for factors that had broad applicability. Although the factor scales in Form IV remained substantially correlated, the General scale could not be used as an adequate substitute for the factor scales for two reasons: (a) Since it was based only on items that were contained in the Experimental Form I, it did not include an adequate sampling of items from several factors based on new items written for Experimental Form III. (b) In the validity studies all of the scales, including the General scale, related to some of the validity criteria, but for other criteria, such as the physiological, only specific subscales showed significant relationships.

Before the Stewart and MacGriffith study, two factor studies were done on Form II of the SSS: one on an English sample (Farley, 1967) and one with a Japanese translation given to a Japanese sample (Ohkubo, Note 1). The general factor, defined by the unrotated factor loadings on the first factor, correlated .67 between English and American samples but only .35 between both American and English samples and the Japanese sample. A translated questionnaire cannot be expected to show very high cross-cultural factor reliability because of language and cultural differences. The reasonably high correlation between English and American samples was encouraging.

One of the aims of the present study was to examine the cross-cultural reliabilities of the factors in Form IV of the SSS, comparing the factor-analytic results from the original study (Zuckerman, 1971) with those from a large, socially heterogeneous sample of an English population. If the four factors originally derived from the American sample were meaningful and had a biological basis (Zuckerman, 1974), they would show cross-cultural as well as cross-sex stability.

A second purpose was to develop a shorter form of the SSS, based on the four factor analyses (English and American males and females). In this form, a total score, derived from the summation of the four factor scores, could be substituted for the General scale in Forms II and IV, which did not contain an adequate sample of items from the Dis and BS factors.

Assuming that the same factors could be found in English and American samples, the third question concerned cultural differences in scores on the sensation-seeking scales. Ohkubo (Note 1) found that both Japanese and Thai students (Thai data from Berkowitz, 1967) scored lower than American students on the General scale of Form II. These

differences must be interpreted cautiously, since they were based on translated sensation-seeking scales. Farley and Farley (1967) found that a sample of English male industrial apprentices and civil servants scored very close to the mean for American college males, despite the differences in socioeconomic and educational levels. The question remains: Do English and American subjects resemble each other on new subscales developed on the basis of factor similarity between the national samples?

Sex differences have been found on the General scale in American, Japanese, and Thai samples and on the factor scales in American college samples (Zuckerman, 1974, in press). A fourth purpose of the study was to see if similar sex differences would be found in the English sample.

A number of studies summarized by Zuckerman (1974, in press) have reported negative correlations between age and the sensation-seeking General scale when the samples covered a wide age range. However, none of these studies have studied age decline in a systematic fashion in all of the sensation-seeking scales. A fifth aim of this study was to examine age decline in the SSS subscales in the English sample. Adequate data are not yet available to do this kind of analysis in an American sample.

Method

Subjects

The English subjects consisted of 254 males and 693 females from the Maudsley Twin Register, ranging in age from 16 to 70. These subjects were used for the following reasons: (a) This group could provide data for a genetic analysis of the SSS; (b) they had previously taken the Eysenck Personality Questionnaire (EPQ) and thus could provide comparison data on these two instruments; (c) they covered a wide age range, thus providing our first good data for age comparison in a normal population; and (d) they were an interested and cooperative group, having answered previous questionnaires by mail. The SSS Form IV was sent out by mail to twins who had previously taken the EPQ. The return rate was about 80%.

The question can be raised as to whether or not twins are a special population. Previous studies showed that twins from the Maudsley Twin Register have normal patterns of scores on personality tests (Eysenck, 1976).

After the data from Form IV were analyzed in the English sample, a new form (Form V) of 40 items was constructed. This form, along with the EPQ, was given to 97 male and female undergraduates from two large sections of undergraduate psychology at the University of Delaware. Most of these students fell in the age range of 17–25, and the modal range was 18–20. The SSS was given first, and the EPQ was given second.

The 72-item SSS Form IV item responses were intercorrelated and factor analyzed in the English male and female samples separately. They were rotated obliquely to simple structure using the promax method, and the loadings were compared with the loadings from the previous study by Zuckerman (1971). Product–moment correlations, the principal components method, and oblique rotations were used in both studies. The previous study (Zuckerman, 1971) factored the SSS Experimental Form III, which contained 113 items, whereas the current study factored Form IV, containing 72 items. The factor structure might have shown some differences due to the extra 41 items in the previous study. These 41 items were not included in Form IV because they showed no loadings of any size on the four primary factors. This means that they contributed little to the interpreted factor structure, so the difference between the two forms should not have introduced much distortion in the comparison of factors across samples.

The sample on which the American factor analysis was based consisted of 160 male and 172 female undergraduates from psychology courses at Temple University. The English sample was much more heterogeneous as to age and education, and differences in the factor structure could have occurred because of the difference in populations. But to repeat the argument used in regard to sex differences in factor structure: If factors are meaningful and have some biological basis, they should be generalizable to a broad range of the population.

Our design allowed for sex and national comparisons of factor reliability: English males with American males, English females with American females, English males with English females, American males with American females, English males with American females, and English females with American males.

Results

Factor Reliabilities

The rotated factor loadings on the first four factors in the six samples were correlated over 71 items. One item from the General scale was missing in the 113-item Form III given to the American groups, but this was not an item contained in any of the factor scales. The matrix of correlations was 16 × 16 (4 samples × 4 factors).

The factor reliability coefficients from this matrix are shown in Table 1, which also gives

Table 1
Factor Reliability Coefficients

Comparisons between	Sensation-Seeking Scale factors			
	TAS	ES	Dis	BS
Eng M/Eng F	.90	.68	.79	.70
Eng M/U.S. M	.87	.72	.60	.37
Eng M/U.S. F	.67	.51	.66	.51
Eng F/U.S. M	.88	.68	.66	.65
Eng F/U.S. F	.72	.75	.77	.30
U.S. M/U.S. F	.73	.67	.79	.01
Range of cross-factor correlations	.06 to −.55	.09 to −.49	.41 to −.49	.44 to −.55

Note. Eng = English, U.S. = American, M = males, F = females; TAS = Thrill and Adventure Seeking, ES = Experience Seeking, Dis = Disinhibition, BS = Boredom Susceptibility.

the range of other correlations between different factors within a sample and between different factors across samples. As in the multimethod–multitrait validity model (Campbell & Fiske, 1959), the correlations between the same factors across samples should be significant and exceed the correlations between different factors (traits in the multimethod–multitrait model). Of course, reliability coefficients should also be high as well as being significant.

Three of the four factors clearly met these criteria of factor reliability. Thrill and Adventure Seeking, Experience Seeking, and Disinhibition all showed significant and reasonably high resemblance between the four national and sex samples. With the exception of only 1 of the 18 correlations for these three scales, the coefficients all exceeded .60 and all fell above the range of the cross-factor correlations.

The case was not as clear for the Boredom Susceptibility factor. Although the factor was fairly similar in English males and females, it showed no correspondence in American males and females, and two of the four cross-national comparisons showed weak ($< .40$), if significant, resemblance. Only three of the coefficients exceeded the range of the cross-factor correlations for this factor.

Construction of Form V

On the basis of the four factor analyses, an attempt was made to select items for a new form (Form V), with the aim of using 10 items for each factor that met the criteria of having a primary loading on the same factor in all samples and loadings exceeding .30 in magnitude. Such scales would have the greatest value for the cross-cultural comparisons.

There was no problem in meeting these criteria for TAS, in which all but one of the items (21) had loadings over .30 on the factor in all four samples. When a choice had to be made between items having similarly high factor loadings, an attempt was made to diversify the content in the new scales.

For Dis, one item (47) had to be selected that did not meet the criteria in the American male sample and another (66) that did not in the English male sample. The BS scale had previously been defined by male loadings, since the factor was not well defined in the American females. Another item (12) did not meet the criteria in the English males. One item (61) had to be included even though it did not meet the criteria in the American analyses. The most radical change was on the ES scale, on which three new items (11, 15, and 25) had to be included even though they did not meet the criteria in all the samples. In some cases items with loadings of slightly less than .30 had to be used, but they always had their highest loading on the relevant factor.

In this manner, 10 items were selected from each of the four primary factors in the SSS to comprise Form V. A total score for this new form can be obtained by summing the

four subscale scores, but Form V contains no general scale as did Form IV.

Table 2 shows the sensation-seeking choice on each item selected, with the factor loadings of that item on the appropriate factor in each of the four samples. In comparing these loadings it should be remembered that the factor analyses were of 72 items in the English sample and 113 in the American sample, so that some of the total variance may have been on items not directly compared across samples.

Scale Reliabilities on Forms IV and V

Table 3 shows internal reliabilities in the English and American Temple University samples for Form IV and the English and American University of Delaware samples for Form V. The reliabilities of the English and American samples were quite similar for Form IV even though the structure of these scales was determined only by the American factor analyses.

The reliabilities of the Form V factor scales were expected to be somewhat lower because the scales were shorter, that is, 10-item scales as opposed to 14- and 18-item scales in Form IV. Actually the only substantial drop in reliability was on the ES scale where reliabilities fell from .7 and .8 to .6.

The most homogeneous scales, TAS and Dis, showed little loss of reliability in the new form; the ES reliability fell somewhat but was still within acceptable limits; the BS reliability remained at the borderline range of high .5, where it had been for American females in Form IV.

Correlations Between Scales

The correlations between the factor scales in Forms IV and V are shown in Table 4. These scale correlations had been rather high in Form IV, and it was hoped that the scales in Form V would have more independence, although some significant correlation was still expected.

Table 4 shows that the correlations among subscales, particularly among ES, Dis, and BS, that were quite high in Form IV were reduced in Form V. TAS continued to correlate with ES in Form IV but showed very low and sometimes insignificant correlations with Dis and BS.

National and Sex Differences

Table 5 shows the comparisons of English and American male and female samples on Form V. Form V was felt to be most appropriate for these comparisons, since these factor scales were based on cross-national similarity of factors. Only the 16- to 19-year-old English subjects were used in these comparisons, since the American college students were mostly within this age range. Although the young English and American males were not different on the total SSS score, the American males were significantly higher on Experience Seeking, and the English males scored higher on Boredom Susceptibility. The American females were significantly higher than the English on the total score, the Thrill and Adventure-Seeking scale, and the Experience-Seeking scale.

Looking at sex differences within the two national groups, both English and American males were significantly higher than the females on the total score and on the TAS and Dis factor scores. The English males were higher than the English females on BS. There were no significant sex differences on the ES scale in either country.

Age Comparisons

Table 6 shows the mean scores of the males and females on the SSS, Form V within each age group of the English sample. Figure 1

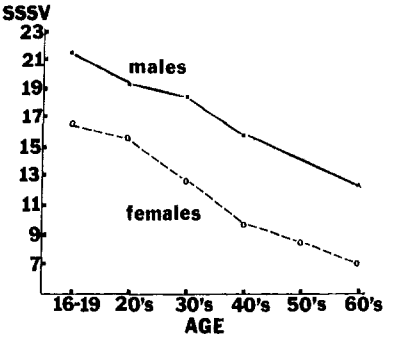

Figure 1. Changes in sensation-seeking total scores as a function of age. (SSSV = Sensation-Seeking Scale Form V.)

Table 2
Loadings of Items Selected for Form V of the Sensation-Seeking Scale

No. on Form IV	Item	Loading			
		English		American	
		M	F	M	F
	Thrill and Adventure Seeking				
10	I often wish I could be a mountain climber.	.68	.47	.44	.31
21	I sometimes like to do things that are a little frightening.	.43	.36	.50	.25
29	I would like to take up the sport of water skiing.	.62	.73	.71	.64
31	I would like to try surfboard riding.	.64	.64	.76	.56
35	I would like to learn to fly an airplane.	.45	.64	.63	.33
37	I would like to go scuba diving.	.59	.58	.64	.36
43	I would like to try parachute jumping.	.63	.69	.66	.32
53	I like to dive off the high board.	.53	.54	.54	.45
69	I would like to sail a long distance in a small but seaworthy sailing craft.	.52	.46	.54	.38
71	I think I would enjoy the sensations of skiing very fast down a high mountain slope.	.65	.58	.57	.52
	Experience Seeking				
11	I like some of the earthy body smells.	.40	.39	.46	.16
15	I like to explore a strange city or section of town myself, even if it means getting lost.	.28	.56	.23	.48
18	I have tried marijuana or would like to.	.51	.47	.60	.58
19	I would like to try some of the new drugs that produce hallucinations.	.34	.36	.60	.44
25	I like to try new foods that I have never tasted before.	.60	.33	.23	.34
33	I would like to take off on a trip with no preplanned or definite routes or timetables.	.37	.39	.40	.41
34	I would like to make friends in some of the "far-out" groups like artists or "hippies."	.57	.35	.48	.45
38	I would like to meet some persons who are homosexual (men or women).	.56	.47	.56	.54
51	I often find beauty in the "clashing" colors and irregular form of modern painting.	.53	.36	.50	.45
68	People should dress in individual ways even if the effects are sometimes strange.	.42	.41	.47	.49
	Disinhibition				
6	I like wild "uninhibited" parties.	.49	.57	.53	.54
22	I enjoy the company of real "swingers."	.50	.41	.38	.50
23	I often like to get high (drinking liquor or smoking marijuana).	.39	.59	.41	.46
47	I like to have new and exciting experiences and sensations even if they are a little unconventional or illegal.	.41	.31	.12	.32
54	I like to date members of the opposite sex who are physically exciting.	.46	.58	.45	.32
55	Keeping the drinks full is the key to a good party.	.45	.54	.35	.49
59	A person should have considerable sexual experience before marriage.	.35	.43	.42	.32
60	I could conceive of myself seeking pleasures around the world with the "jet set."	.46	.37	.40	.42
64	I enjoy watching many of the "sexy" scenes in movies.	.54	.68	.39	.54
66	I feel best after taking a couple of drinks.	.26	.47	.42	.33

Table 2 (*continued*)

No. on Form IV	Item	Loading			
		English		American	
		M	F	M	F
	Boredom Susceptibility				
7	I can't stand watching a movie that I've seen before.	.47	.34	.35	.22
12	I get bored seeing the same old faces.	.13	.50	.50	.12
16	When you can predict almost everything a person will do and say, he or she must be a bore.	.45	.47	.40	.26
17	I usually don't enjoy a movie or a play where I can predict what will happen in advance.	.42	.41	.56	.03
27	Looking at someone's home movies or travel slides bores me tremendously.	.65	.35	.30	.24
46	I prefer friends who are excitingly unpredictable.	.39	.34	.33	.15
52	I get very restless if I have to stay around home for any length of time.	.39	.39	.31	.04
57	The worst social sin is to be a bore.	.61	.24	.34	.12
61	I like people who are sharp and witty even if they do sometimes insult others.	.47	.29	.25	.05
70	I have no patience with dull or boring persons.	.54	.37	.32	.39

Note. M = male, F = female. Only the sensation-seeking choices in the forced-choice items are presented here; a copy of Form V can be obtained from the first author.

shows the data for the total score, and Figure 2 shows the trends for the separate scales.

The *F* values from simple analyses of variance between the age groups for each sex are shown in Table 6. The age differences in sensation seeking were significant for the total score and on all scales for the females. The age change was significant for the total score and the Thrill and Adventure-Seeking and Disinhibition scales for males but was not significant for Experience Seeking and Boredom Susceptibility. Examining Figure 2, it is apparent that the fall in SSS scores was more pronounced for the TAS and Dis scales than for the ES and BS scales.

Discussion

Considering the differences in populations sampled in England and America and the additional items used in Form III on the American sample, the amount of cross-national and cross-sex correspondence in the SSS factors is impressive. Even the Boredom Susceptibility factor, which had not shown cross-sex reliability in the American sample, did show such reliability in the English one. The data argue strongly for the meaningfulness of the factor scales of the SSS Form IV. This is not to say that we can generalize to other cultures. The status of the factors in translated forms of the SSS is still an open question.

On the basis of the factor stabilities, we were able to construct a new shorter Form V of the SSS, with a total score balanced for the four factors. This new form has the advantage of reducing the interscale correlations between component factor scores with little loss in reliability of these scores. Form V should prove useful in further research on sensation seeking on both sides of the Atlantic.

Although there were educational differences between the younger American and English samples that were compared, education has not proved to be a highly significant factor in the SSS (Farley & Farley, 1967; Kish & Busse, 1968). The English and American males did not differ on the total score on Form V, but the pattern on the subscales was different, with Americans scoring higher on Experience Seeking and the English scoring higher on Boredom Susceptibility. Experience seeking seems to represent a style of life common in the 1960s that is still an influence in America in the 1970s but it is apparently not as important in England. The ES scale was

Table 3
Scale Reliabilities on Sensation-Seeking Scale Forms IV and V

Scale	Form IV				Form V			
	English[a]		American[b]		English[a]		American[c]	
	M	F	M	F	M	F	M	F
General	.72	.80	.75	.81	—	—	—	—
TAS	.83	.84	.85	.85	.81	.82	.77	.77
ES	.76	.78	.84	.88	.65	.67	.61	.61
Dis	.77	.75	.71	.75	.78	.77	.74	.76
BS	.62	.66	.75	.58	.65	.59	.57	.56
Total scores (Form V)	—	—	—	—	.83	.86	.84	.85

Note. M = males, F = females; TAS = Thrill and Adventure Seeking, ES = Experience Seeking, Dis = Disinhibition, BS = Boredom Susceptibility. All coefficients in the table are significant, $p < .01$.
[a] Alpha coefficients were used; *n*s = 254 males and 693 females.
[b] Split-half corrected coefficients were used; *n*s = 160 males and 170 females.
[c] Internal consistency coefficients (from interitem *r*s) were used; *n*s = 97 males and 122 females.

the only one that did not show any hereditary influence in the preliminary study by Buchsbaum as reported in Zuckerman (1974). Experience seeking may have been most influenced by the educational differences between the two samples.

Disinhibition seemed to be less influenced by cultural differences than did other scales. Some unpublished data on racial differences in America (Kurtz & Zuckerman, Note 2) have shown that blacks are lower than whites on TAS and BS but not on Dis or ES. Dis seems to be the most culture-free scale, and it is the one most highly related to certain psychophysiological variables (Zuckerman, 1974).

In contrast with the males, the American females were significantly higher than the English females on the total score and on the ES and TAS subscales. As with the males, no national differences were found on the Dis scale.

The new Form V shows more selective sex

Table 4
Correlations Between Subscales on Forms IV and V

Sensation-seeking scales correlated	Form IV				Form V			
	English[a]		American[b]		English[a]		American[c]	
	M	F	M	F	M	F	M	F
TAS × ES	.42	.52	.39	.37	.27	.42	.27	.39
TAS × Dis	.22	.35	.35	.21	.25	.35	.14*	.29
TAS × BS	.28	.36	.25	.28	.10*	.20	.06*	.18
ES × Dis	.54	.57	.54	.51	.32	.47	.24**	.40
ES × BS	.57	.59	.51	.62	.21	.29	.26	.37
Dis × BS	.45	.50	.44	.34	.42	.48	.37	.40

Note. M = males, F = females; TAS = Thrill and Adventure Seeking, ES = Experience Seeking, Dis = Disinhibition, BS = Boredom Susceptibility. All correlations were significant ($p < .01$), unless otherwise indicated.
[a] *N*s = 254 males and 693 females.
[b] *N*s = 160 males and 170 females.
[c] *N*s = 97 males and 122 females.
* *ns*.
** $p < .05$.

Table 5
Comparisons of American College Sample with Younger English Twin Samples (Ages 16–19) on Sensation-Seeking Scale Form V

	Males					Females					Sex differences	
	Eng[a]		U.S.[b]		Eng vs. U.S.	Eng[c]		U.S.[d]		Eng vs. U.S.	Eng	U.S.
Scale	*M*	*SD*	*M*	*SD*	*t*	*M*	*SD*	*M*	*SD*	*t*	*t*	*t*
TAS	7.4	2.6	7.8	2.3	1.40	5.6	3.0	6.9	2.6	3.45**	4.20**	2.73**
ES	4.1	2.1	4.8	2.0	3.03**	4.1	2.2	5.0	2.1	3.08**	.12	.73
Dis	6.2	3.1	5.9	2.6	.86	4.1	2.7	4.7	2.7	1.71	4.59**	3.21**
BS	3.8	2.5	3.2	2.0	2.76**	2.8	2.1	3.0	1.9	.64	2.91**	.65
Total	21.5	6.7	21.6	5.7	.17	16.6	7.2	19.6	6.6	3.22**	4.58**	2.44*

Note. Eng = English, U.S. = American; TAS = Thrill and Adventure Seeking, ES = Experience Seeking, Dis = Disinhibition, BS = Boredom Susceptibility.
[a] $n = 72$.
[b] $n = 97$.
[c] $n = 106$.
[d] $n = 122$.
* $p < .05$.
** $p < .01$.

differences than does the old Form IV, on which males were higher than females on all of the scales (Zuckerman, 1974). On Form V the replicated (across nations) sex differences were limited to the TAS and Dis scales. Males also scored significantly higher on the total score in both countries. The Dis scale showed the largest sex difference, even on Form IV. The difference on Dis can, of course, be interpreted as reflecting different kinds of socialization experiences of males and females in both countries. However, the finding of a relation between gonadal hormones and Dis in a sample of American males (Daitzman, Zuckerman, Sammelwitz, & Venkataseshu, Note 3) suggests that biological factors may also play a role in differences on this personality dimension.

The decline in sensation seeking with age was predicted in the theory formulated by Zuckerman (1969). In the chapter by Zuckerman (1974), it was predicted that TAS and

Table 6
Mean Scores of English Males and Females by Age Groups

	n		Total score		TAS		ES		Dis		BS	
Ages	M	F	M	F	M	F	M	F	M	F	M	F
16–19	72	106	21.5	16.6	7.4	5.6	4.1	4.1	6.2	4.1	3.8	5.1
20–29	119	250	19.3	15.4	6.6	4.4	4.4	4.2	4.9	4.0	3.5	2.8
30–39	25	145	18.4	12.3	5.7	3.4	4.5	4.0	4.6	2.9	3.6	2.1
40–49	26	89	15.8	10.7	4.3	2.6	4.0	3.7	4.6	2.1	3.0	2.3
50–59	—	69	—	8.5	—	2.3	—	2.8	—	1.4	—	2.0
60+	12	34	12.4	7.0	3.2	1.7	2.7	2.2	3.3	1.0	3.3	2.0
			F between age groups[a]									
			9.3*	36.0*	11.6*	40.3*	2.0	11.6*	4.6*	32.5*	<1	5.1*

Note. M = males, F = females; TAS = Thrill and Adventure Seeking, ES = Experience Seeking, Dis = Disinhibition, BS = Boredom Susceptibility.
[a] *df*: males = 4/249, females = 4/688.
* $p < .001$.

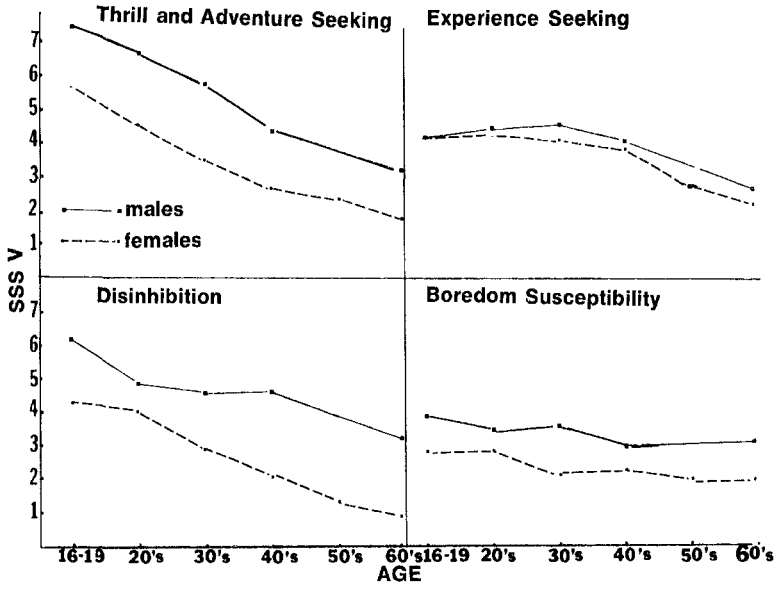

Figure 2. Changes in sensation-seeking subscale scores as a function of age. (SSSV = Sensation-Seeking Scale Form V.)

ES would decline at faster rates than Dis and BS. The results showed a greater decline for TAS and Dis than for ES and BS. A regression analysis showed that age accounted for 18% of the variance for Dis, 21% for TAS, 5% for ES, and 3% for BS. There was a clear linear decrease in sensation seeking with age on the total SSS score.

What is the basis of the increasing cautiousness and conservatism of age? It might simply reflect the mellowing effect of accumulated experience. But many biological changes also occur with age, including a slowing of cortical activity and diminution of gonadal hormone output. Eysenck (1967) has suggested that biological factors may affect attitudinal traits. It can be hypothesized that the same biological factors that are prominent in aging affect the sensation-seeking tendency.

The other part of the age postulate (Zuckerman, 1969) suggests that sensation seeking increases from childhood to adolescence. Farley and Cox (1971) found no increase from ages 14 to 17. A new instrument will have to be developed for younger children in order to test this hypothesis.

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