The arousal predisposition scale:
Normative data

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The arousal predisposition scale (APS) is a 12-item inventory that has been designed to measure individual differences in arousability. It has already been shown to predict patterns of sleep disruption, and task related arousal increases. Norms for the APS, based on data from 786 university students, are provided. Since the data indicate that there is a sex difference in arousability, with females showing higher APS scores, data are also tabulated separately by gender.

Arousal is an important component of theories of motivation, performance, attention, and personality, as well as an important concept in behavioral medicine and other branches of psychology. Much evidence, however, suggests that an individual manifests different degrees of arousal under varying conditions. This individual difference dimension of arousal may be viewed as a predisposition toward arousal, and we will call this trait *arousability*.

Research oriented toward the measurement of arousability has tended to take one of two main directions, emphasizing either physiology or self-report (see Kohn, Cowles, & Lafreniere, 1987). The physiological approach involves the measurement of various physical indexes that may correlate with individual differences in arousability (see, e.g., Bodunov, 1985; Danilova, 1985; Uherik, 1985). The self-report approach has involved the attempt to assess subjective perceptions of arousal state, which seem to be highly correlated with the physiological measures (Thayer, 1967, 1970). Occasionally, both types of measurement have been incorporated as single dimensions in more complex assessment inventories, such as the neuroticism scale in the Eysenck personality inventory (Eysenck, 1970) or the strength of excitation scale in the Strelau temperament inventory (Strelau, 1983). Alternatively, individual differences in arousability may be scored as a composite of several scales, as in the EASI-III (Buss & Plomin, 1975). All of these self-report scales have been designed on the basis of theoretical constructs, personality typologies, or behavioral observations.

Rather than develop a scale based on theoretical constructs, Coren (1988) attempted to construct a measure of arousability as a trait or a predisposition by using an empirical selection and validation procedure. Since current evidence suggests that several forms of insomnia may result from cognitive hyperarousal, he reasoned that the tendency toward disrupted sleep could be used as an index of arousability. Starting with an original pool of 314 items, he selected a 70-item preliminary inventory. Next, he tested a sample of 196 subjects in order to develop and validate a 12-item self-report inventory that he called the arousal predisposition scale or APS. Item selection was based on the ability to predict a global measure of insomnia. The resultant scale was then cross-validated with a sample of 693 subjects, whereupon it was shown to be a valid and reliable predictor of six indexes of sleep disturbance. The resultant scale correlates 0.45 with a total sleep disruption score and has a split-half reliability of 0.83.

Although the APS was developed as a measure of individual differences in arousability and validated against measures of insomnia, if the trait of arousability that it purportedly measures is generalizable, it may well be useful as a measure of individual differences in arousal that would be expected in various tasks and in the presence of environmental stressors. This has been confirmed in a recent study by Coren and Aks (1990), who were able to show that increases in arousal when an individual was asked to perform a task in the presence of distracting stimuli were correlated with APS scores.

Although the APS is an attractive instrument for the measure of arousability, involving only 12 items, and taking about 2-3 min to complete, its use has been limited somewhat, due to the absence of normative data against which an individual's score could be compared. To provide such norms, the following study was conducted.

METHOD

The arousal predisposition scale (Coren, 1988) was administered to 786 subjects (479 women and 307 men). The subjects were students enrolled at the University of British Columbia who participated on a volunteer basis. Mean age of the subjects was 20.1.

Table 1
Norms for the Arousal Predisposition Scale

APS Score	Total Sample	Women	Men
20*	0.6	0.0	1.6
21	1.0	0.2	2.3
22	1.7	0.2	3.9
23	2.2	0.2	5.2
24	3.6	1.3	7.2
25	5.3	2.9	9.1
26	7.6	5.4	11.1
27	9.9	6.3	15.6
28	12.1	7.3	19.5
29	15.4	9.6	24.4
30	19.6	12.9	30.0
31	23.9	16.5	35.5
32	29.1	21.5	41.0
33	33.3	24.4	47.2
34	39.8	31.3	53.1
35	45.0	36.5	58.3
36	50.4	42.0	63.5
37	55.5	48.4	66.4
38	61.7	55.5	71.3
39	67.3	61.4	76.5
40	72.1	66.8	80.5
41	77.5	72.7	85.0
42	81.7	78.3	87.0
43	85.4	82.9	89.3
44	88.8	87.1	91.5
45	91.5	90.4	93.2
46	93.6	93.3	94.1
47	95.3	95.2	95.4
48	96.9	96.7	97.4
49	98.1	97.5	99.0
50	99.1	99.2	99.0
51†	99.5	99.6	99.3
Total N	786	479	307

Note—The APS scores are listed against the cumulative percentages for a total sample of 786 university students (mean age 20.1 years), with separate listings for men and women.   *or lower.   †or higher.

RESULTS AND DISCUSSION

The distribution of APS scores is shown in the form of cumulative percentages in Table 1. There was a difference in arousability between the men and the women. The women showed a mean arousability of 37.6, which is 3.1 points higher than the men's average of 34.5. This difference is statistically significant [$t(784) = 6.57, p < .001$]. Because of this sex difference in arousability, the men's and women's scores are also presented separately in Table 1.

The normative data presented here should allow researchers who wish to use the APS in studies of arousability, insomnia, or personality, or in behavioral medicine or other areas, to interpret the scores of individual subjects more easily.

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