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Boredom Proneness and the Need for Cognition

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The effect of need for cognition on boredom proneness scores among 214 undergraduates was investigated using the short form of the Need For Cognition Scale (Cacioppo, Petty, & Kao, 1984) and Farmer and Sundberg's (1986) Boredom Proneness Scale. As predicted, the results showed that individuals low in need for cognition possessed greater boredom proneness scores. That is, individuals who were less likely to engage in and enjoy effortful cognitive activities were more prone to experience the negative affect of boredom when compared to high need-for-cognition persons. It appears that individuals who are more inclined to provide their own stimulation are more apt to escape the negative experiences of boredom. Implications of these findings, gender differences among boredom proneness and need for cognition, and areas for future research are discussed.

The relevance of studying boredom becomes obvious when one considers the plethora of social and psychological issues with which this construct has been associated. For instance, in education boredom has been linked to low grades and diminished academic achievement (e.g., Maroldo, 1986), early dropout rates (e.g., Robinson, 1975), and school dissatisfaction (e.g., Gjesne, 1977). In industrial settings, boredom has been associated with job dissatisfaction (e.g., O'Hanlon, 1981), property damage (e.g., Drory, 1982), and increased accident rates (e.g., Branton, 1970). Clinically, boredom has been shown to be significantly related to depression, anxiety, hopelessness, hostility, and loneliness (e.g., Farmer & Sund-

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berg, 1986; Vodanovich, Verner, & Gilbride, 1991). Additionally, boredom has been implicated as a contributing factor in drug use (e.g., Johnston & O'Malley, 1986), pathological gambling (e.g., Blaszczynski, McConaghy, & Frankova, 1990), eating disorders (e.g., Ganley, 1989), and engaging in unprotected sex (Arnett, 1990).

The ability to keep oneself interested or entertained has been viewed as an important component in the self-regulation of one's mood or experience of boredom (see Hamilton, 1981; Hamilton, Haier, & Buchsbaum, 1984). Furthermore, Czikszentmihalyi (1975) and Polly, Vodanovich, Watt, and Blanchard (1993) have suggested that the skill or ability to self-generate information and/or activity may play an important role in actually decreasing the likelihood of boredom. Persons who are able to maintain an adequate level of internal stimulation are presumed to be less likely to experience boredom.

Perkins and Hill (1985, p. 231) have stated that ". . . cognitive changes in the direction of less differentiated and more homogeneous construing give rise to a state of subjective monotony which induces, or perhaps even represents, the state we call boredom." That is, these authors discuss boredom as being associated with the tendency to perceive stimuli in a one-sided and unidimensional manner. In addition, the boredom-prone individual has been described as: deficient at maintaining an adequate level of stimulation (e.g., Fiske & Maddi, 1961; Mikulus & Vodanovich, 1993; Zuckerman, 1979), amotivating, lacking autonomous orientation (Farmer & Sundberg, 1986), possessing a subjectively slower perception of time passage (Watt, 1991), less attributionally complex, and employing internal and stable attributions (Polly, *et al.,* 1993).

The previous review suggests that individuals who are more inclined to self-generate stimulation are less likely to experience boredom. Given this supposition, one might expect that boredom-prone individuals would differ on Cacioppo and Petty's (1982) Need For Cognition Scale, which measures individual differences in the tendency to engage in and enjoy effortful cognitive endeavors and problem solving.

Persons possessing a low need for cognition have been described as receiving little enjoyment from thinking or from increasing their understanding of events around them (Cacioppo & Petty, 1982). High need-for-cognition individuals, on the other hand, have been shown to expend greater cognitive effort (Cacioppo, Petty, & Morris, 1983), to be better problem solvers (Heppner, Reeder, & Larson, 1983), to possess higher curiosity and sensation seeking scores (Olson, Camp, & Fuller, 1984), and to exhibit a greater tendency to produce causal explanations for observed behavior (Lassiter, Briggs, & Slaw, 1991).

The purpose of the present study was to examine the effect of need for cognition on boredom proneness scores. Based on the previous review,

it was hypothesized that persons with low need for cognition would possess significantly higher levels of boredom proneness when compared to those possessing high need for cognition.

METHOD

Subjects

Participants consisted of 135 women and 79 men attending undergraduate psychology and business courses at two urban universities in the Southeast. The 214 volunteers ranged in age from 18 to 52 years, with a mean age of 22.3 and a standard deviation of 5.4.

Measures

The instruments used in the present study included the short form of the Need For Cognition Scale (Cacioppo, Petty, & Kao, 1984) and Farmer and Sundberg's (1986) Boredom Proneness Scale. Participants also completed a short demographic form.

Need for Cognition

The short form of the Need for Cognition Scale (NCS; Cacioppo *et al.*, 1984) was used to assess an individual's tendency to engage in and enjoy effortful cognitive activity (i.e., thought). The term "need" in Cacioppo *et al.*, (1984) measure is meant to imply a statistical (i.e., likelihood or tendency) rather than biological connotation. The 18-item, Likert-type scale ranges from (9) "Very strong agreement" to (1) "Very strong disagreement," with higher scores reflecting a greater need for cognition (e.g., "Thinking is not my idea of fun, "I would prefer complex to simple tasks," "I only think as hard as I have to").

Both the original 34-item Need For Cognition Scale (NCS; Cacioppo & Petty, 1982; Osberg, 1987) and the 18-item short form used in the present study (Cacioppo, *et al.*, 1984; Tolentino, Curry, & Leak, 1990) have been shown to possess adequate reliability and validity. For example, internal consistency reliability (θ) has been reported to be sufficient (.91; Cacioppo, *et al.*, 1984). In addition, Olson *et al.*, (1984) found the NCS to be significantly correlated with multiple measures of curiosity, and non-significantly associated with social desirability and anger. Internal consistency reliability (coefficient α) for the short form of the NCS used in this study was .90.

Boredom Proneness

To assess the tendency to experience boredom, Farmer and Sundberg's (1986) Boredom Proneness Scale (BPS) was used (e.g., "It takes a lot of change and variety to keep me really happy," "Time always seems to be passing slowly," "It is easy for me to concentrate on my activities"). Internal consistency reliability for the 28-item, true–false scale has ranged from .73 (Ahmed, 1990) to .84 (Watt & Davis, 1991).

In the present study, the Boredom Proneness Scale (BPS) was converted to a 7-point Likert scale format to increase the measure's sensitivity. Internal consistency reliability for the revised 7-point format has been reported to be .82 (Watt, 1991), .83 (Vodanovich and Kass, 1990a), and .83 (Watt & Vodanovich, 1992). Internal consistency reliability (coefficient α) of the revised BPS in this study was .81.

The Boredom Proneness Scale (BPS) has also been shown to possess sufficient validity. That is, the measure has been significantly related to self-reported boredom (r = .67), job boredom (r = .49), and boredom susceptibility (r = .25) (Farmer & Sundberg, 1986). In addition, the BPS has been significantly related to measures of negative affect, such as

depression (r = .41), loneliness (r = .53), and hopelessness (r = .41) (see Farmer & Sundberg, 1986; Vodanovich *et al.*, 1991).

Lastly, recent factor analytic evidence suggests that boredom may best be viewed as a multidimensional construct (e.g., Vodanovich & Kass, 1990a). Specifically, these authors found the Boredom Proneness Scale (BPS; Farmer & Sundberg, 1986) to consist of the following five factors: External Stimulation, Internal Stimulation, Affective Responses, Perception of Time, and Constraint. In the present study, subscale scores based on the work of Vodanovich and Kass (1990a) were computed on the BPS.

RESULTS

Consistent with previous studies (e.g., Ahlering, 1984; Cacioppo & Petty, 1982; Lassiter, Briggs, & Bowman, 1991), a median split was conducted on the distribution of need-for-cognition scores in order to categorize participants into high (M = 101.9; N = 108) and low (M = 75.6; N = 106) cognitive groups.

A two-way multivariate analysis of variance (MANOVA), with need for cognition and gender as independent variables and the five factors identified on the Boredom Proneness Scale (BPS) as separate dependent variables, was computed to determine the effects of need for cognition and gender on boredom proneness scores. The results revealed a significant main effect for need for cognition, $F(5, 206) = 10.7$, $p < .01$, such that individuals with low need for cognition (M = 95.5) had significantly higher scores than those with high need for cognition (M = 84.3) on the following BPS subscales: Internal Stimulation, $F(1, 210) = 29.8$, $p < .01$; Perception of Time, $F(1, 210) = 28.7$, $p < .01$; and Affective Responses, $F(1, 210) = 23.4$, $p < .01$. No significant differences due to need for cognition were found on the External Stimulation and Constraint subscales (Table 1).

A significant main effect was also obtained for gender, $F(5, 206) = 4.76$, $p < .01$, such that males (M = 93.7) possessed significantly greater scores than females (M = 87.7) on External Stimulation, $F(1, 210) = 20.9$, $p < .01$. No significant differences due to gender were uncovered on the other four BPS subscales. In addition, the interaction between need for cognition and gender was non-significant. It should further be noted that gender differences with respect to need for cognition were non-significant.

DISCUSSION

As predicted, the results demonstrated that individuals low in need for cognition possessed a significantly greater tendency toward experiencing boredom when compared to those possessing a high need for cognition. That is, individuals who derived little enjoyment from thinking or from increasing their understanding of events around them were significantly more prone to experience the negative affect of boredom. Specifically,

TABLE 1
MEANS AND STANDARD DEVIATIONS FOR BOREDOM PRONENESS SUBSCALES BY HIGH AND LOW NEED FOR COGNITION

	Need for cognition	
Boredom subscales	Low[a]	High[b]
External stimulation	28.2	28.2
	(7.4)	(8.3)
Internal stimulation	25.9	21.0
	(5.8)	(6.1)
Perception of time	24.9	22.9
	(3.0)	(2.8)
Affective responses	18.4	15.9
	(3.8)	(4.3)
Constraint	8.3	8.0
	(3.2)	(3.3)

Note. Standard deviations are listed in parentheses.
[a] $n = 106$; [b] $n = 108$.

low need-for-cognition individuals had significantly greater scores on the following boredom proneness subscales: Internal Stimulation, which represents one's ability to generate internal stimulation or keep oneself amused and interested; Perception of Time Passage, which is concerned with one's organization and perception of time passage; and Affective Responses, which assesses emotional reactions to boredom.

The results of the present study may offer partial empirical support for previous theoretical assumptions that a less varied or more homogeneous perception of stimuli may lead to the experience of boredom and an increase of time passage (see Hamilton, 1981; Hamilton *et al.*, 1984; Perkins & Hill, 1985). That is, to the extent that low need-for-cognition individuals perceive stimuli as unidimensional, their perceptions of boredom and awareness of time passage may increase.

The present findings also suggest that the assumption that boredom proneness may be alleviated by the self-generation of information or by keeping oneself entertained may appear to have some merit (Czikszentmihalyi, 1975; Polly *et al.*, 1993). Furthermore, daydreaming has been suggested as one self-generating activity that can be used to overcome boredom (e.g., Klinger, 1987; Tushup & Zuckerman, 1977). Presumably, individuals who are able to provide their own stimulation are better able to escape the negative experience of boredom.

One cautionary note may need mention. Given that need for cognition has been shown to be moderately associated with measures of general intelligence (e.g., Cacioppo & Petty, 1982), and boredom has been pre-

viously associated with low grades and diminished academic achievement (e.g., Fogelman, 1976; Maroldo, 1986), the possibility of intellectual ability being responsible for the obtained relationship between these two constructs is not inconceivable. It should be noted, however, that the mediating effect of intelligence on the tendency to be bored has received mixed results (e.g., Drory, 1982; Fogelman, 1976; Robinson, 1975; Smith, 1955).

The present findings also revealed a significant gender difference with respect to boredom proneness. Specifically, males were found to possess significantly higher boredom proneness scores than females on the External Stimulation subscale, which assesses one's need for excitement, challenge, and variety.

These gender results are consistent with previous research which have generally found males to possess significantly greater boredom scores than females (e.g., Tolor, 1989; Vodanovich & Kass, 1990b; Watt & Vodanovich, 1992; Zuckerman, 1979). Males appear to experience greater boredom than females in situations where a perceived lack of external stimulation exists. In addition, recent research suggests that males may use more stable and less complex attributions for their boredom (Polly *et al.*, 1993). No significant gender differences were found with respect to need for cognition, which is also consistent with past findings (e.g., Cacioppo & Petty, 1982; Tolentino *et al.*, 1990).

Future research should seek to determine exactly how the dispositional factor of need for cognition bears on the negative affect of boredom. For instance, what exactly is it about persons high or low in need for cognition that impacts their boredom proneness?

Langer (1978, p. 52) has stated that, "While not thinking often may serve an adaptive function, there are clearly instances where people should be taught to make attributions and to think . . . for their own peace of mind." The possibility of alleviating the negative effects of boredom-prone individuals (e.g., depression) by increasing their propensity for engaging in and enjoying cognitive activities seems a plausible, albeit speculative, suggestion.

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