

DEVELOPMENT OF AN INSTRUMENT TO MEASURE NOCTCAELADOR: PSYCHOLOGICAL ATTACHMENT TO THE NIGHT-SKY

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Undergraduate students ($N = 150$) participated in a study developing a 10-item scale (the Noctcaelador Inventory; NI) to measure noctcaelador: adoration and attachment to the night-sky. The NI demonstrated good internal consistency, test-retest reliability, normality, and preliminary validity. The scale significantly correlated with self-reported night-sky viewing behaviors and was not significantly correlated with social desirability. It was concluded that this scale suitably measures individual differences in noctcaelador.

Introduction

For thousands of years humans have watched the night-sky (Eddy, 1979; Hoskin, 1999). Historically, it has been indicated that the night-sky has been watched for several reasons: observing its beauty, cultural inspiration (i.e., building design and art), predicting the future, and attaining insight or knowledge (Brashear & Lewis, 2001; Hoskin, 1999; Motz & Weaver, 1995; Wyman, 1936). Recent research, however, suggested that for some college students, a psychological connection to the night-sky may influence night-sky watching behaviors and attitudes (Kelly, 2003; Kelly & Kelly, in press).

Kelly (2003) found that college students tended to express a positive attitude toward, and individual differences in perceptions of, the night-sky. Importantly, Kelly found that night-sky watching attitudes and behavior were influenced by one underlying construct, identified as noctcaelador (adoration and psychological attachment to the night sky). Kelly and Kelly (in press) replicated and extended Kelly's (2003) study, finding that individuals self-reported night-sky watching

behaviors, in addition to attitudes, are influenced by one underlying construct. The measures used in Kelly's (2003) and Kelly and Kelly's (in press) study, however, were not psychometrically sound or developed specifically to measure noctcaelador. The aim of the present research, therefore, was to develop a reliable, valid measure of noctcaelador among college students.

Method

Participants and Procedure

After obtaining informed consent, 120 females and 30 males (M age = 24.4 years, $SD = 6.8$) enrolled in undergraduate psychology courses were administered the self-report surveys described below.

Measures

Development of Noctcaelador Items. Following previous work (Kelly, 2003; Kelly & Kelly, in press), 33 items were developed by the author to measure attachment to, mood and emotional responses to, behaviors related to, and general interest in the night-sky. Items were randomly ordered and administered using a 5-point

Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree."

Self-Assessed Behavior Items. "Behavior" items were selected from Kelly and Kelly's (in press) study. Participants indicated the number of nights they intentionally looked at the night sky (past 6 months) and the number of nights they anticipated intentionally looking at the night sky (next 6 months). Participants also indicated the extent to which opportunities to see the night sky would influence their decision in choosing a place to live, sacrificing sleep before an important test, and recollections of how often the night sky was watched as a child.

Marlowe-Crowne Social Desirability Scale. Reynold's (1982) 11-item version of the Marlowe-Crowne Social Desirability Scale was administered as a measure of social desirability.

Results

Responses to the 33 noctcaelador items were subjected to a principal components factor analysis. A Scree test revealed that only one factor, accounting for 50% of the variance, should be retained. All 33 items loaded above .40 on that factor. To shorten the scale, items with the lowest item-total correlations were systematically deleted until 10 items remained with a Coefficient Alpha of .92. These 10 items were subjected to another principal components analysis. One factor emerged (Eigenvalue = 5.5) accounting for 61% of the variance in responses.

These 10 items were thereafter titled the Noctcaelador Inventory (NI). Item responses were summed with higher scores representing a greater attachment to the

night sky. The average NI score was 29 ($SD = 7.9$), ranging from 10-48. The NI was normally distributed (skewness = .002). Scores were not significantly correlated with age ($r = .13, p = .11$) and there were no significant sex differences in scores ($t(145) = 1.45, p = .15$). One month after the initial administration of the NI, 97 of the same students completed the scale again. The correlation for the total 10-item scores between time 1 and time 2 was .88.

NI scores significantly correlated with all five self-assessed behavior items. Individuals scoring higher on the NI reported that they had made a point to look at the night sky more often over the past 6 months ($r = .43, p < .0001$), expected to look at the sky more often in the next six months ($r = .47, p < .0001$), were more likely to use opportunities to see the night sky in their decision of where to live ($r = .50, p < .0001$), were more likely to sacrifice sleep before an important morning exam to look at the night sky ($r = .41, p < .0001$), and recalled more instances of looking at the night sky as a child ($r = .42, p < .0001$). The NI did not significantly correlate with the short Marlowe Crowne scale ($r = .07, p = .41$).

Discussion

The present study developed a scale to measure individual differences in noctcaelador. The NI measured a single factor and had high internal consistency. NI scores were not better explained by demographic variables or a socially desirable response set. The NI exhibited temporal stability, and thus measured a stable trait. Further the NI evidenced some preliminary validity as demonstrated by factor

analysis and correlations with the five self-reported behavioral items. The NI did not significantly correlate with social desirability, indicating that the NI was not heavily influenced by a tendency to respond in a socially desirable manner. The results of this study are consistent with previous findings that a single underlying factor (noctcaelador) influences night-sky watching behaviors and attitudes (Kelly, 2003; Kelly & Kelly, in press). Future research should attempt to identify additional individual differences variables related to noctcaelador.

References

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