

Differences in Psychological Characteristics between Skeptics of and Believers in the Paranormal

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Introduction

This research project addressed a massively understudied question: what is it that makes someone a skeptic rather than a believer in the paranormal? There is very little research in the area, with most focusing on personality variables related to paranormal belief (e.g., Groth-Marnat & Pegden, 1998) or the relationship between certain aspects of mental health and paranormal belief (e.g., Meehl, 1990; Schofield & Claridge, 2007). This project instead measured a variety of demographic, cognitive, and personality variables in a diverse population to examine what factors were (either alone or in combination) related to scores on standardized measures of skepticism.

Study hypotheses were that

- non-skeptics would score higher on level of religiosity, need for closure, needing to belong, need for evaluation, personal need for structure, and agreeableness;
- self-identified skeptics will score significantly higher on need for cognition, openness, and conscientiousness;
- there will be no significant difference between groups on measures of ego identity, neuroticism, extraversion.

Method

Participants

A total of 558 participants participated in this experiment. There were 204 attendees to The Amazing Meeting (TAM) in the sample (62.9% male, average age 42.35, $SD = 12.9$) and 354 college undergraduates (29.7% male, average age 20.11, $SD = 5.17$). There were significant differences on several demographic variables between the two groups, most notably higher overall age, a greater percentage of males, higher income, and lower overall religiosity in the TAM sample.

Measures

Each participant completed the same packet of survey questionnaires, which began by asking about demographic data. They then answered questions on:

- Paranormal belief/skepticism (Paranormal Belief Scale – Revised)
- Experience of odd events (Anomalous Experience Inventory)
- Religious belief (Santa Clara Strength of Religious Faith Questionnaire)
- Exploration of and commitment to different aspects of their identities (Ego Identity Process Questionnaire)
- Preferences for order, structure, and predictability; and avoidance of ambiguity; decisiveness; and closed-mindedness (Need for Closure)
- Differences in chronic tendencies to assess the positive and negative qualities of objects (Need for Evaluation)
- Tendencies to engage in and enjoy thinking (Need for Cognition)
- Preferences for simple structures that allow the world to be experienced in a simplified, unambiguous ways (Personal Need for Structure)
- Need to “fit in with” society (Need to Belong)
- Five factors of personality (Big Five Inventory).

Procedure

In order to examine study hypotheses, questionnaire data was gathered from two populations. First, attendees at The Amazing Meeting (TAM), an annual conference sponsored by the James Randi Educational Foundation focused on science, skepticism, and critical thinking, were recruited. For their effort, they received a \$10 giftcard. The second group consisted of undergraduate students at a mid-size university in the central United States. They participated to obtain part of their required course credit. Both completed the questionnaires via an online interface using Qualtrics.

Results

Correlational analyses were supportive of many, but not all, of the study hypotheses. In the total sample, those with more skepticism towards the paranormal were

- Less religious ($r = .578, p < .0001$)
- Had less preference for order and predictability ($r = .398, p < .0001$)
- Much higher tendencies to engage in and enjoy thinking ($r = -.401, p < .0001$)
- More tolerance of ambiguity ($r = .135, p < .002$)
- Lower need to conform to societal standards ($r = .146, p < .001$)
- More open to new experiences ($r = -.195, p < .0001$)
- More conscientious ($r = -.125, p = .016$)
- Displayed less neuroticism ($r = .188, p < .0001$)

There was no significant relationship between paranormal belief and ego identity or extraversion, as hypothesized, but no relationships were observed between agreeableness or need for evaluation as well.

Next, the predictive nature of these variables was explored using a multiple hierarchical regression with PBS score as the criterion.

- On Step 1, gender was entered to control for its influence (as found in much prior research). As expected, it significantly predicted paranormal belief, with females showing higher levels, adjusted $R^2 = .071, F(1, 186) = 15.30, p < .0001$.
- Next, the cognitive and personality variables were entered stepwise. Step 2 found Need for Cognition adding significantly to the model, adjusted $R^2 = .248$, change in $F(1, 185) = 44.87, p < .0001$.
- Step 3 added Need for Closure, adding a small amount more of predictive ability, adjusted $R^2 = .271$, change in $F(1, 184) = 6.74, p = .01$.
- Finally, Step 4 added the personality dimension of Conscientiousness, adjusted $R^2 = .290$, change in $F(1, 183) = 5.83, p = .017$.

As such, the total model accounted for approximately 29% of the variance in level of paranormal belief with these four variables.



Discussion

These data indicate that there may be underlying aspects of cognition and personality which inform scientific skepticism. Specifically, aspects related to tolerating ambiguity, enjoying cognitive tasks, lack of conforming, and the personality characteristics of high openness, high conscientiousness, and low neuroticism.

Demographic variables, however, are also obviously important, such as gender and religiosity. Further data collection that allows for a broader age range of paranormal believers will be very useful in examining potential age effects.

how come you *never* see a headline like

PSYCHIC wins lottery'?

Jay Leno



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