

## Perceptual-Personality Variables Associated with Anomalous Experiences vs Paranormal Attributions

### ABSTRACT:

#### **Background**

Independent research increasingly suggests that subjective parapsychological experiences involve two components driven by potentially different mechanisms: (a) anomalous experiences, versus (b) paranormal attributions.

#### **Aims**

Using the “Survey of Anomalous Experiences” (SAE) measuring Proneness to Anomalous Experiences (PAE) vs. Proneness to Paranormal Attributions (PPA), we aimed to validate PAE and PPA as distinct constructs using Modern Test Theory (MTT) and test the hypotheses that (a) PAE correlates with a permeable mental boundary structure, and (b) PPA correlates with a low analytic cognitive style.

#### **Method**

Study 1 re-analyzed previously published SAE data ( $n = 1,377$ ) using MTT methods. Study 2 was an online survey ( $n = 180$ ) that had experients of anomalous experiences during a recent paranormal tourism activity rate the impact of their experiences using a new Enchantment-Adjective Checklist that referenced emotional, sensorial, timeless, rational, and transformative themes. Finally, Study 3 had online respondents ( $n = 1.014$ ) complete eight measures to explore their predictive relationships to PAE and PPA via linear regressions and machine learning algorithms: (a) Peters et al. Delusions Inventory, (b) Launay-Slade Hallucination Scale, (c) Synesthesia, (d) Revised Transliminality Scale, (e) Survey of Traumatic Childhood Events, (f) AT-20 scale, (g) Fear of the Anomalous, and (h) Tobacyk’s Revised Paranormal Belief Scale.

#### **Results**

Study 1 found that both PAE and PPA had confounds that significantly weakened their measurement properties. We also uncovered a secondary factor related to “item extremity” rather than contents. The intensity of experiences and attributions therefore are critical factors in research. Study 2 observed that 21 items on the Enchantment-ACL formed a Rasch hierarchy of generally “pleasant” themes that was free of response biases related to Age, Sex, and Latency. This hierarchy captured all five experiential themes, and the resulting Enchantment-ACL measure of this “state of enchantment” showed good Rasch reliability (0.82) and a positive correlation with global enchantment ratings ( $r = 0.51, p < .001$ ). The Rasch loading patterns further suggested that the 21 Enchantment-ACL items also varied along the bi-polar distinction of “Attention” (positive loadings that might reference “detection” of stimuli) vs. “Connection” (negative loadings that might reference the “interpretation” of stimuli). This putative effect and interpretation arguably parallel the concepts of PAE and PPA. Finally, both linear regression models and machine learning algorithms in Study 3 found that: Hallucinations, Synesthesia, Delusional Ideations, and Childhood Trauma (but not age or sex) significantly predicted PAE,

whereas Intolerance of Ambiguity, Fear of the Paranormal, and Paranormal Belief (but not age or sex) predicted PPA. However, all independent variables proved useful in predicting both PAE and PPA. This might indicate that the two concepts overlap more so than is currently understood with respect to their underlying mechanisms or structural relationship.

### **Conclusions**

Both PAE and PPA involve psychometric confounds that can distort model-building and theory-formation in this domain. Still, empirical patterns independent of these confounds suggest that anomalous experiences are related to permeable mental boundaries and paranormal attributions are linked to a low analytic cognitive style. Future research that studies subjective parapsychological experiences relative to attitudes, beliefs, or other individual differences should therefore (a) make clear distinctions between PAE and PPA, (b) use MTT approaches and machine learning methods to avoid measurement issues that can undermine causal models, and (c) explore more nuanced or complex relationships between the processes that drive PAE and PPA.

### **Keywords**

Attribution theory, Psychometrics, Paranormal belief, Anomalous experiences, Rasch scaling

### **Published Work:**

Houran, J., Lange, R., & Laythe, B. (2020). Understanding consumer enchantment via paranormal tourism: Part II - Preliminary rasch validation. *Cornell Hospitality Quarterly*. doi:10.1177/1938965520971276

Lange, R., Ross, R. M., Dagnall, N., Irwin, H. J., Houran, J., & Drinkwater, K. (2019). Anomalous experiences and paranormal attributions: Psychometric challenges in studying their measurement and relationship. *Psychology of Consciousness: Theory, Research, and Practice*, 6, 346-358. doi: 10.1037/cns0000187

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