

PSYCHOLOGICAL AND NEUROPHYSIOLOGICAL MECHANISMS UNDERPINNING THE ASSOCIATION BETWEEN CHILDHOOD TRAUMA AND PARANORMAL EXPERIENCE AND BELIEF

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Background: The relationship between childhood trauma and paranormal experience and belief has previously been interpreted as a need for emotional refuge and/or control over life events (Marks, 2021). An alternative explanation might be alteration in immunological and neurophysiological mechanisms involved in information processing.

Aims: This project investigated i) sensory processing measures (psychometrics) as mediators in the relationship between childhood trauma and paranormal experience and belief; and ii) biological mechanisms related to childhood trauma and associated psychometric measures.

Methods: PHASE I: Participants ($n=712$) completed an online assessment of adverse childhood experiences (maltreatment and household challenges; Felitti et al 1998), noetic experience and belief, (Wahbeh et al., 2020), unusual sensory experiences (Mitchell et al 2017), experiential sensitivity (Aron & Aaron, 1997) and dissociative experiences (Bernstein & Putnam, 1986). PHASE II: A sub-cohort ($n=100$) underwent a blood (inflammation), and electroencephalographic (three stimulus auditory oddball) tests. P300 amplitude was measured in response to targets (controlled attention) and white noise bursts (bottom-up attention capture).

Results: Childhood adversity (maltreatment and challenges) and noetic experiences and belief were positively correlated. This relationship was fully mediated by other psychometric scores, with unusual sensory experiences being the strongest predictor of noetic experience and belief. Inflammation (c-reactive protein) was only associated with experiential sensitivity in women. Childhood adversity was inversely associated with left centroparietal P300 amplitude to target stimuli (P3b; maltreatment) and positively associated with the left frontocentral response to bottom-up attention capture (P3a; household challenges). P3a was also positively associated with unusual sensory and dissociative experiences (left frontocentral and bilateral parietooccipital), whilst a similar relationship was seen for experiential sensitivity across right hemisphere regions.

Conclusions: Whilst childhood adversity alters the dynamics between controlled attention and bottom-up attention capture, this does not explain the relationship between trauma and noetic belief or experience. Heightened response to attention capture is more closely related to measures of sensory and dissociative experiences, which might contribute to the trauma-paranormal relationship.

Keywords: Paranormal, Trauma, P300, Sensory experience, Dissociative

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