

# Psychological and neurophysiological mechanisms underpinning the association between childhood trauma and paranormal experience and belief

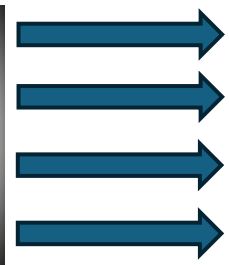
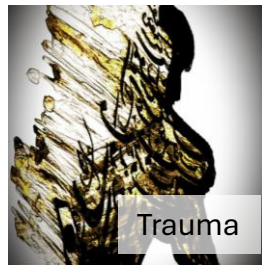


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## BACKGROUND

Relationship: trauma history and paranormal ideation/noeticism (experience, belief) <sup>1</sup>

- emotional refuge and/or control over life events
- immunological, neurophysiological?



Noeticism

Wellbeing

Immunology

Neurology

## AIMS:

- Replicate relationship between trauma and noeticism (experience, belief)
- Investigate underpinning mechanisms
  - Psychometric (sensory, psychological)
  - Electrophysiological (EEG, ERPs)
  - Immunological (inflammation, tryptophan catabolism)
- Interaction: Trauma x Noeticism ->outcomes

## METHODS: 2-phase study

**PHASE I:** Online psychometrics (n=712)

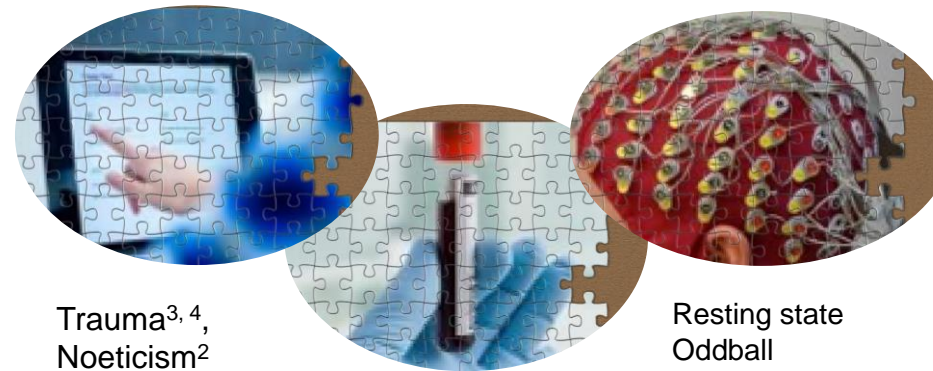
**PHASE II:** (n=100/160)

- **Nutrition (inflammatory diet), Blood, EEG**

Auditory oddball<sup>10</sup>: P300 amp in response to:

- Targets (controlled attention)
- White noise bursts (bottom-up attention capture)

Mismatch Negativity (MMN) and resting state



Trauma<sup>3, 4</sup>,  
Noeticism<sup>2</sup>  
Sensory anomaly<sup>5</sup>  
Sensitivity<sup>6</sup>,  
Dissociation<sup>7</sup>  
Depression<sup>8</sup>  
Anxiety<sup>9</sup>

Inflammation  
kynurenines

Resting state  
Oddball  
Mismatch negativity

## ANALYSIS PIPELINE

- Correlation
- Linear regression (mediation)
- Network analysis
- Latent profile analysis (moderation)
- Machine Learning (classification of brain states)

## POSTER: Preliminary findings

### Spoiler alert

- Trauma positively correlates with noetic experiences and beliefs
- Comparison across measures of trauma
- Relationship with P300 (oddball)
  - Reduced P3b amp with trauma
  - Raised P3a amp with noeticism, and related psychometricsInflammation positively associated sensitivity, particularly in women (Ease of excitation)

## Remaining

- Continued data collection
- Latent profile analysis
- Kynurenine analysis

<sup>1</sup>Marks (2021, 10.1177/0276236620934003); <sup>2</sup>Wahbeh et al., (2020, 10.12688/f1000research.20409.2); <sup>3</sup>Felitti et al (1998, 10.1016/s0749-3797(98)00017-8); <sup>4</sup>Buri et al 2018, 10.1037/t75567-000); <sup>5</sup>Mitchell et al (2017, 10.3389/fpsyg.2017.01363); <sup>6</sup>Aron & Aaron,(1997; 10.1037/0022-3514.73.2.345); <sup>7</sup>Bernstein & Putnam (1986, 10.1097/00005053-198612000-00004); <sup>8</sup>Kroenke et al (1999, 10.1037/t06165-000); <sup>9</sup>Spitzer et al (2006, 10.1001/archinte.166.10.1092); <sup>10</sup>Sumich et al (2008, 10.1016/j.cortex.2007.10.012