

EXPLORING HOW SCHIZOTYPY AND PARANORMAL BELIEF INFLUENCE THE TENDENCY TO MAKE THE TYPE I ERROR AND THE DETECTION OF DEGRADED AND PARANORMAL STIMULI IN RANDOM NOISE

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Subjective paranormal experiences are often experienced against a random backdrop; for example, reading the tea leaves to predict the future, scrying, and hearing “electronic voice phenomena” of purported discarnate spirits amid static noise. To date, the dominant framework for understanding paranormal cognition is that believers in the paranormal and those prone to experiencing paranormal/anomalous phenomena (in particular, those who score high on positive schizotypy) are biased toward the detection of signals or patterns in randomness where none are there. This is known as apothenia or the tendency to make a Type I error (c.f., Brugger, 2001), which results in seeing things that are not actually there (hallucinations), making connections between random events and a proneness to find meaning and significance in random events.

Prior research does indicate that believers and those who are prone to anomalous experiences are more likely to perceive meaningful visual and auditory stimuli amid random noise (where none are presented) (e.g., Feelgood & Rantzen, 1994; Young, Bentall, Slade & Dewey, 1987). In addition, research suggests that under perceptually ambiguous situations (where a stimulus is present but degraded), believers are more prone to rapid and over confident decisions about what is hidden amid noise which are less likely to be updated in the light of new information (e.g., Blackmore & Moore, 1994).

Research also indicates that those who score high on positive schizotypy (and related variables) may actually be particularly efficient at the perception of subliminal or weak stimuli (Crawley, French, & Yesson, 2002; Evans, 1997). However, little research has systematically explored individual differences in the perception of weak or degraded stimuli presented amid random noise.

Recent research in parapsychology has indicated that sensory noise may be conducive to performance at an extrasensory perception task. In addition, although findings are mixed, prior research suggests that positive schizotypy may relate to psi performance. Where schizotypy is considered multidimensionally and cluster analyzed, two profiles of positive schizotypy emerge; one which seems to be associated with good mental health, whilst the other is associated with poorer mental health. Interestingly, recent research (Holt & Simmonds-Moore, 2008) found that the healthy schizotypy cluster was the only group to perform significantly on an attention-based psi task.

This study aimed to explore several questions pertinent to the perception/detection of “weak stimuli” (including psi and degraded stimuli) which may or may not be hidden amid random visual and auditory noise. The project will extend the existing literature by exploring three possibilities for subjective paranormal experiences among believers in the paranormal/positive schizotypes: 1) Psi experiences are derived from a greater propensity to detect psi; 2) Psi experiences are derived from a greater predisposition to detect subliminal or weak stimuli; and 3) Psychic experiences are better explained by the human tendency to find meaning in randomness, apothenia or the Type I error (e.g., Brugger, 2001).

This project is informed by research from the hallucination literature (e.g., see Bentall, 1990), the paranormal belief literature (Blackmore & Moore, 1994, Rogers, & Prophet, 2008), the psychotherapy literature (e.g., the use of the Rorschach), the perception without awareness literature (e.g., see Merikle, Smilek & Eastwood, 2001), research on Electronic Voice Phenomena (e.g., see Barušs, 2001) and more recently, the psi literature (e.g., Simmonds & Fox, 2004).

Despite the proposal that the perceptual biases are understood to reflect a continuum (Brugger, 2001), there is currently little research which explores the psychology of the disbeliever. As such, this study will explore the possibility that disbelievers might process information in an opposite manner to that of believers, and be more likely to make the Type II error.

Approximately 40 believers and 40 disbelievers were preselected to participate in a study on individual differences and pattern detection. All potential participants completed a questionnaire battery and were sent an information sheet which gave a detailed description of the study. Participants then came into the laboratory to take part in a computerized study (written in EPRIME2). The experimenter described the study and invited questions from the participant. Participants then undertook a sound check (a very basic hearing test), saw an example of visual noise, heard an example of pink noise, listened to relaxation music and then completed eight trials; four for visual and four for the auditory sense. Each trial consisted of 8 screens of random pixilation for the visual condition and eight trials of 30-second blocks of pink noise for the auditory condition. Each participant was exposed to two weak stimuli targets, one ESP target and one trial with no targets (in counterbalanced order across all sessions). Weak stimuli comprised a series of degraded pictures or spoken words spliced into pink noise (these gradually became clearer across the eight trials). Participants were asked to note down vague impressions, thoughts and feelings on note sheets (one per trial), and to press a key on the computer if and when they could identify something in the visual or auditory noise. If they pressed enter, they were asked to type in what they saw/heard and were then prompted for a confidence rating on what they saw or heard. They were asked to press the button as many times as they saw something different or changed their minds about their confidence during the trial.

At the end of the visual block of trials, each participant was shown the target pictures they were exposed to and told whether they were weak stimuli or psi targets. At the end of the auditory block, each participant was played the auditory targets they were exposed to and told whether they were weak stimuli or psi targets.

Psi performance will be ascertained by two independent judges rating the similarity of imagery and guesses in the psi trials to four possible targets (targets were organized into orthogonal sets of four prior to the start of this experiment. Clusters of schizotypy and paranormal belief and disbelief will be compared on psi scoring and weak stimuli detection. Confidence and the number of button presses per trial will also be compared between believers and disbelievers and different types of schizotypy.

Qualitative analysis will be undertaken to explore the types of imagery people experience amid random visual and auditory noise (irrespective of the existence of a target). Differences will be explored between believers and disbelievers.

Post hoc analyses will enable further understanding of the psychology of the disbeliever, for instance, in terms of their anomalous experiences and their scoring on positive schizotypy measures.

By exploring perceptual and cognitive biases and paranormal and perception of weak stimuli in a within participants study, it will be possible to shed more light on the nature and etiology of believing in and experiencing paranormal phenomena and disbelieving in or not experiencing paranormal phenomena.

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