

# **A fully transparent pre-registered replication study of precognitive detection of reinforcement using an expert consensus design**

## **ABSTRACT:**

### **Background**

Multiple individual studies and meta-analyses report positive findings in parapsychology. One of the most influential of these study series was reported by Bem in 2011, showing evidence supporting the existence of precognition.

### **Aims**

This project aimed to develop methodological tools that facilitate highly credible and rigorous research. Furthermore, we aimed to demonstrate the use of these tools via a multi-site, fully transparent replication of Bem's (2011) Experiment 1.

### **Method**

We developed a study protocol for this replication effort via a Consensus Design Process. During this process more than twenty experts on the field (both proponents and opponents of the original ESP hypothesis) contributed to finalizing the protocol. The credibility-enhancing methods include direct data deposition combined with born-open data and real-time research reports, to demonstrate data integrity. Piloting, checklists, laboratory logs, and video documented trial sessions were used to ascertain as-intended protocol delivery. Tamper-evident software and external research auditors provided further assurance of integrity. We demonstrate the application of these methods in a replication of Bem's 2011 experiment on extrasensory perception.

### **Results**

In the main study we observed a total of 49.89% successful guesses (99.5% CI = 49.11%, 50.67%); posterior mode = 50.02%, posterior 90% HDI = 49.6%, 50.4%), which do not support Bem's original findings.

### **Conclusions**

Our findings indicate that the study paradigm used in Bem's 2011 experiment 1 is unlikely to yield evidence for the existence of ESP. We also found that the credibility-enhancing tools used in this project are feasible and they enable conducting a study with very high credibility.

### **Keywords**

Precognition, Transparency, Research credibility, Replication

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### **Published Work:**

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