

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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