

## **Examining observer effects on random processes: A correlation matrix**

### **ABSTRACT:**

#### **Background**

The study investigates the interaction between mind and matter, exploring correlations between psychological behaviour and a physical system. Psychological data, acquired during task performance, and physical variables from a random number generator are combined into matrices for joint analysis. The Correlation Matrix Method (CMM) is a promising approach used to assess predictions from the Model of Pragmatic Information. Previous research employing this method has shown favourable outcomes, aligning with the Model's principles. CMM investigates the correlation between psychological and physical systems, to shed light on the interaction between mind and matter.

#### **Aims**

To examine the statistical distribution of matrices generated in experimental sessions compared to control sessions.

#### **Method**

A new experimental setup was employed, involving an online game designed for touchscreen devices. This study involved 726 participants from over 50 countries in 10,964 sessions. Participants' interactions, recorded as finger swipes, served as psychological variables. The study included experimental and control sessions conducted on participants' devices. Two RNGs, Random.org and Mersenne Twister, were used to investigate the effects of generated randomness.

#### **Results**

The analysis of each RNG's data showed statistically significant differences for Random.org, unlike Mersenne Twister, which showed no significant variations. The findings support the replication of CMM using Random.org.

#### **Conclusions**

The possibility of participant influence the RNG, despite their blindness, needs to be addressed in future studies. Implementing stricter control measures and additional blinding mechanisms could help address this potential confound.

#### **Keywords**

Mind and mater, Random number generator, Correlation matrix, Online game

### **Published Work:**

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