

Experimental tests of the role of consciousness in the physical world

Results:

A double-slit optical system was used to test the possible role of consciousness in the collapse of the quantum wavefunction. The ratio of the interference pattern's double-slit to single-slit spectral power was predicted to decrease when attention was focused towards the double-slit as compared to away. Each test session consisted of 40 counterbalanced attention-towards and attention-away epochs, and each epoch lasted between 15 and 30 seconds. Data contributed by 137 people in six experiments, involving a total of 250 test sessions, indicated that on average the spectral ratio decreased as predicted ($z = -4.36$, $p = 6 \times 10^{-6}$). Another 250 control sessions conducted without observers present tested hardware, software, and analytical procedures for potential artifacts; none were identified ($z = 0.43$, $p = 0.67$). Variables including temperature, vibration, and signal drift were also tested, and no spurious influences were identified. By contrast, factors associated with consciousness, such as meditation experience, electrocortical markers of focused attention, and psychological factors including openness and absorption, significantly correlated in predicted ways with perturbations in the double-slit interference pattern. The results are consistent with consciousness-related interpretations of the quantum measurement problem.

Published work:

None yet. Journal paper submitted to *Physics Essays* in April 2011.

Areas of interest:

Mind-matter interaction, quantum measurement problem

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