

Psychophysical interactions in an optical diffraction system

ABSTRACT:

Background

The von Neumann–Wigner consciousness-collapse interpretation (CCI) of quantum mechanics suggests that human observation can influence quantum interference patterns that would resemble outcomes consistent with weak quantum measurements.

Aims

To empirically investigate whether conscious human observation affects interference patterns in an optical diffraction system.

Method

Forty-seven participants, trained in meditation or esoteric attention practices, conducted experiments using custom-built optical diffraction devices. They alternated between observing and not observing real-time feedback signals from interference patterns, with simultaneous unobserved data serving as a control. Comprehensive environmental and data integrity controls were implemented.

Results

The primary hypotheses regarding mean illumination shifts were not supported, but significant changes in skewness were observed at the predicted time lag (-4 ± 1 s). Exploratory analyses indicated a robust, progressive reduction in interference during observed periods ($p = 5.91 \times 10^{-14}$). Practitioners focusing attention outward (magicians) significantly outperformed inward-focused meditators ($p = 0.008$).

Conclusions

Results partially supported the CCI hypothesis, indicating observer-dependent interference effects consistent with weak quantum measurements. Further refined experiments are recommended to confirm these preliminary findings.

Keywords

Quantum observer, Photon interference, Mind-matter interaction, Psychophysical effects, Weak quantum measurement

Os textos são da exclusiva responsabilidade dos autores
All texts are of the exclusive responsibility of the authors

Published Work:

Radin, D. (2025). Observer influence on quantum interference: Testing the von Neumann–Wigner consciousness-collapse theory. *Physics Essays*, 38(1), 64-80. doi:10.4006/0836-1398-38.1.64

Researcher's Contacts:

Institute of Noetic Sciences
7250 Redwood Blvd
Suite 208, Novato
CA 94945-3271
USA

Phone: +1-707-775-3500

Email: dradin@noetic.org