Verrell's Law - Archival Quantum Data Re-Analysis Protocol - Public Brief

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Purpose

This brief explains the public-facing plan to test Verrell's Law using historical quantum measurement datasets. It outlines hypotheses, high-level methods, success criteria, and transparency commitments without disclosing proprietary parameters or internal software.

What Verrell's Law predicts at a glance

Small but consistent deviations in outcome statistics that correlate with information gradients. In practice we test for weak biases that appear when measurements are repeated, when apparatus geometry favors one informational pathway, or when electromagnetic environment differs. Effects are expected to be small but coherent.

Datasets in scope

- Bell tests 1970s to present including photon pairs and loophole-closed runs
- Delayed choice and quantum eraser experiments
- Stern Gerlach style spin measurements and replications
- Quantum optics photon counting archives and cavity experiments where available

High-level methods

- Pre-register the analysis plan on OSF or Zenodo - hypotheses, metrics, exclusion rules
- Normalize for detector efficiency, dark counts, and known systematics
- Compute statistics such as conditional probabilities, run-length distributions, temporal autocorrelation, and geometric clustering indices
- Model comparison using Bayes factors for Verrell's Law vs a pure Born rule null
- Cross validation across laboratories and apparatus types to test repeatability

Operational definitions - safe summary

Information gradient is defined from observable detection streams using simple entropy differences between matched channels. Exact parameterization and coupling constants are private until validation. The idea is to turn a static bias into a time tagged signal that can be checked across historical runs.

What counts as success

- Consistent non zero bias in the predicted direction across at least two experiment classes
- Significant Bayes factor in favor of the informational model or tight upper bounds that can be independently replicated
- Open notebooks and code for the analysis pipeline so other groups can repeat the calculations on the same public data

Transparency and what is kept private

Public: dataset lists, preprocessing steps, statistical tests, and full results. Private for now: proprietary software internals, numerical coupling constants, and bias modulator implementation details. Those will be disclosed in white paper format after validation and before licensing.

Planned outputs

- Public preregistration record and overview
- Reproducible analysis environment for public data - container or notebooks
- Summary report with bounds or positive findings

Contact and citation

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Contact: collapse aware ai - public channel to be announced with preregistration

Notice

Full methods, proprietary math, and software parameters are archived in The Safe and will be released in stages after validation. This brief contains no proprietary code or equations.