

Ulf Holmberg

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Career

Ulf Holmberg is a Swedish economist and independent researcher who has worked extensively in the fields of international economics and equity markets. More recently he has published scientific studies examining the potential impact of human consciousness on random physical systems.

Holmberg combines rigorous empirical testing with formal modelling using data from the [Global Consciousness Project \(GCP\)](#) as well as his own studies. Holmberg has developed his cognitive entropy shift model (CESM) that posits that randomness in distant physical targets can be influenced by mind.

Global Consciousness Project Research

Market Correlations

A paper on GCP data was published by Holmberg in 2020 in the *Journal of Consciousness Studies*. The hypothesis was that major emotionally meaningful world events might leave detectable traces in Max[Z] (a daily metric obtained from a network of random number generators maintained by the GCP). Statistically significant correlations between Max[Z] and returns on major stock indexes were found, with anomalies in the GCP often preceding market movements. Validation was offered for those interested in such metrics as predictive tools.^{[1](#)}

This approach was refined in a 2021 study published in the *Journal of Consciousness Exploration & Research*. Outliers were removed and the first findings re-tested with global stock market data. Consistency in a statistically significant correlation was maintained, suggesting that Max[Z] could potentially serve as a leading indicator for financial market volatility.^{[2](#)}

Volatility Index

Further validation of Holmberg's claim came in a 2024 paper in the *Journal of Economic Studies*. Daily data from 1999 to 2022 was examined to see if Max[Z] could explain variation in the S&P 500 Volatility Index (VIX). Statistically significant effects were produced by interaction models. Arguments for the practical relevance of GCP data when building sentiment models were supported.

An out-of-sample trading simulation was conducted to check for overfitting. Baseline models were beaten by portfolios built on Max[Z]-based signals by between 5% and 14% per year. Most results were significant during periods of high volatility. This suggests GCP data contains sentiment-related components not fully captured by normal market indicators.^{[3](#)}

These studies taken together offer empirical support for using GCP data to develop proxies for aggregate emotion, offering practical value for financial prediction and portfolio management.

Information-Seeking Hypothesis

In 2022, Holmberg extended the hypothesis to include information-seeking sensitivity. He reasoned that global events influencing GCP data should also trigger information seeking because collective attention is influenced. Three versions of global attention indexes were developed from search trends on the ten most-searched news topics for each year. Monthly Google Trends data from 2014 to 2021 were used, then these were compared with aggregated Max[Z] values from the GCP dataset.

Statistically significant correlations at $p < .01$ were returned by all three variations. Effects were stronger in the high emotion subset. These results were validated by out-of-sample forecasting tests – time-series prediction accuracies improved by approximately seven and eight percent with the inclusion of GCP data. This points toward real-world applications.[4](#)

Cognitive Entropy Shift Model

The Cognitive Entropy Shift Model was proposed by Holmberg as a mathematically-based framework. It was designed to be falsifiable and accommodate new empirical data. Goal-directed intention is separated from emotionally triggered attention in the model – though both can operate as informational constraints within stochastic systems. CESM is based in Bayesian statistics and inspired by information theory. A repeatable foundation is created.

Field Trial

The idea that consciousness modulates entropy in physically random processes was the focus of the following research. A two-year trial was conducted using a TrueRNG v3 hardware random number generator at home. More than 38.9 million outputs were recorded. Statistically significant deviations occurred during pre-identified high-stress periods. The strongest effect was noted between 07:55 and 08:10 ($p < 0.001$). No statistically significant deviations were shown by control periods ($p \approx 0.585$). This was taken as evidence for the model's applicability.

Retrospective application of CESM to previous experiments yielded theoretically consistent predictions.[5](#)

Future Directions

Two follow-up projects are currently underway: a pre-registered update of the 2024 paper in the *Journal of Economic Studies* that aims to validate the original findings under different market conditions, and a new field study extending the CESM experiment. Additional controls will further probe entropy modulation and proximity effects.

Holmberg intends to apply lessons learned from previous research to the infrastructure of the next embodiment of the Global Consciousness Project – GCP2. Better understanding of how proximity to devices relates to observed effects should translate into more active devices and regional hubs. An expanded global network might increase sensitivity. A more nuanced assessment of how emotionally charged events impact collective sentiment could be offered.

Michael Duggan

Literature

Holmberg, U. (2020). [Stock Returns and the Mind An Unlikely Result that Could Change Our Understanding of Consciousness](#). *Journal of Consciousness Studies* 27/7, 31-49

Holmberg, U. (2021). [Revisiting Stock Returns and the Mind: Digging Deeper into the Data](#). *Journal of Consciousness Exploration & Research* 12/3, 207-23.

Holmberg, U. (2022). [Validating the GCP data hypothesis using internet search data](#). *Explore* 18/4, 395-402.

Holmberg, U. (2024). [A Novel Market Sentiment Measure: Assessing the Link Between VIX and the Global Consciousness Project's Data](#). *Journal of Economic Studies* 51/2, 288-307.

Holmberg, U. (2025). [Can Consciousness Nudge Randomness?](#) *Journal of Scientific Exploration*, forthcoming.

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Endnotes

Footnotes

- [1.](#) Holmberg (2020).
- [2.](#) Holmberg (2021).
- [3.](#) Holmberg (2024).
- [4.](#) Holmberg (2022).
- [5.](#) Holmberg (2025).