Ethical Statement

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This research adheres strictly to the highest ethical standards governing scientific inquiry and publication. As a predominantly theoretical and computational study, it involves no direct interaction with human or animal subjects, thereby eliminating concerns related to experimental ethics, informed consent, or animal welfare.

All data utilized in our analyses, including empirical datasets for model validation and simulation parameters, were either:

1. Sourced from publicly available, peer-reviewed repositories, with appropriate attribution.
2. Generated through meticulously designed computational simulations, ensuring full reproducibility and integrity of the results.

The author declares no conflicts of interest, financial or otherwise, that could potentially influence the design, execution, or interpretation of this work. This manuscript represents original research, and all external sources, methodologies, and prior contributions have been meticulously cited and acknowledged in accordance with academic best practices.

In unwavering commitment to transparency, open science, and the advancement of collective knowledge, we pledge to make all relevant data, computational code, and supplementary materials publicly available upon reasonable request. This commitment aims to facilitate independent verification, foster collaborative research, and ensure the broadest possible dissemination of our findings.

This study unequivocally upholds the highest standards of scientific rigor, integrity, and ethical conduct, with the overarching aim of advancing knowledge responsibly and contributing meaningfully to the global neuroscience community.