Dear Editors,

We wish to submit an original research article entitled “**Neurocognitive Mechanisms of Narrative Preservation and Transformation in Interpersonal Transmission**” for consideration for publication in *Nature Communications*. This study combined a social transmission chain design with fMRI, demonstrating how different episodic memory representations contribute to the fidelity and distortion of stories as they are passed across individuals.

Narrative transmission is recognized for its crucial role in knowledge dissemination, cultural evolution, and the formation of collective memory in human society. While episodic memory is essential for effective narrative transmission, its inherently reconstructive nature often results in recall distortions. However, how these reconstructive processes influence the preservation of high-fidelity narratives and contribute to distortions across individuals remains poorly understood. This gap is particularly relevant when considering different aspects of transmission, such as detailed content, gist-based understandings, and schematic information.

Our study, therefore, provides a novel framework for understanding narrative transmission by differentiating between paraphrastic transmission (which focuses on content recall and its susceptibility to distortion) and schematic transmission (which refers to narrative structural integrity). Utilizing fMRI in combination with a transmission chain paradigm, we demonstrate that various brain regions involved in episodic memory, particularly distinct subsystems within the Default Mode Network (DMN) and specific subregions of the hippocampus (HPC), play varied and interactive roles in representing and supporting these transmission processes.

Our behavioral results demonstrate a pattern of distortion and divergence in narrative paraphrastic transmission, with convergence in narrative schematic transmission during oral storytelling. Neural results indicate shared representations within the DMNa subsystem for both content and structure. Conversely, the DMNb and DMNc subsystems, along with the anterior and posterior hippocampus, exhibit distinct representations for content and structure. Additionally, our connectome-based analyses challenge the notion that episodic memory fidelity relies solely on neural reinstatement; instead, they emphasize the critical role of network-level interactions in sustaining narratives. This multidimensional approach highlights the complexity of memory processes involved in storytelling and the importance of examining how different neural systems contribute to both the fidelity and distortion of narratives.

Our findings bridge memory research and communication studies, uncovering how neural mechanisms shape the intergenerational transmission of stories. To our knowledge, this is the first neuroimaging study on intact narrative transmission, and we believe these contributions are both original and innovative. The combination of neuroscience, memory systems, and narrative transmission is both pioneering and timely, making this study a valuable contribution to the interdisciplinary fields of cognitive neuroscience, social science, and social communication.

We believe our work will align with the interdisciplinary scope of Nature Communications and would be of great interest to your readership. To increase the impact of the paper and to encourage comments that may be helpful in a potential revision, we have also [submitted the manuscript to bioRxiv](https://www.biorxiv.org/content/10.1101/2025.03.13.643115v1). We confirm that this manuscript is original, has not been published, and is not under consideration elsewhere. We have no conflicts of interest to disclose. Please address all correspondence concerning this manuscript to me at [dinggsh@bnu.edu.cn](mailto:dinggsh@bnu.edu.cn).

We would like to recommend the following potential reviewers for our manuscript, due to their previous important insights on how individuals recall and share information, and on how social and interpersonal dynamics influence memory:

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*Janice Chen*, Johns Hopkins University, janice@jhu.edu

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Thank you for your time and consideration. We look forward to the opportunity to contribute to Nature Communications and are happy to provide additional information if needed.

Sincerely,

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