

*Supplementary materials for:* High-level cognition during  
story listening is reflected in high-order dynamic  
correlations in neural activity patterns

Lucy L. W. Owen<sup>1</sup>, Thomas H. Chang<sup>1,2</sup>, and Jeremy R. Manning<sup>1,†</sup>

<sup>1</sup>Department of Psychological and Brain Sciences,  
Dartmouth College, Hanover, NH

<sup>2</sup>Amazon.com, Seattle, WA

<sup>†</sup>Address correspondence to [jeremy.r.manning@dartmouth.edu](mailto:jeremy.r.manning@dartmouth.edu)

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**Figure S1: Top terms associated with the endpoints of the strongest correlations for the *intact* experimental condition.** Each color corresponds to one order of inter-subject functional correlations. The inflated brain plots display the locations of the endpoints of the 10 strongest (absolute value) correlations at each order, projected onto the cortical surface (Combrisson et al., 2019). The lists of terms display the top 10 Neurosynth terms (Rubin et al., 2017) decoded from the corresponding brain maps for each order. (Also see Fig. 7, top row, in the main text.)



**Figure S2: Top terms associated with the endpoints of the strongest correlations for the *paragraph* experimental condition.** This figure is in the same format as Figure S1, but displays results for the paragraph-scrambled story listening condition. (Also see Fig. 7, second row, in the main text.)



**Figure S3: Top terms associated with the endpoints of the strongest correlations for the *word* experimental condition.** This figure is in the same format as Figure S1, but displays results for the word-scrambled story listening condition. (Also see Fig. 7, third row, in the main text.)



**Figure S4: Top terms associated with the endpoints of the strongest correlations for the *rest* experimental condition.** This figure is in the same format as Figure S1, but displays results for the resting state condition. (Also see Fig. 7, bottom row, in the main text.)

## Supplemental references

- Combrisson, E., Vallat, R., O'Reilly, C., Jas, M., Pascarella, A., l Saive, A., Thiery, T., Meunier, D., Altukhov, D., Lajnef, T., Ruby, P., Guillot, A., and Jerbi, K. (2019). Visbrain: a multi-purpose GPU-accelerated open-source suite for multimodal brain data visualization. *Frontiers in Neuroinformatics*, 13(14):1–14.
- Rubin, T. N., Kyoejo, O., Gorgolewski, K. J., Jones, M. N., Poldrack, R. A., and Yarkoni, T. (2017). Decoding brain activity using a large-scale probabilistic functional-anatomical atlas of human cognition. *PLoS Computational Biology*, 13(10):e1005649.