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- > e.g. an awkward social interaction, a stubborn problem, or an immersive story.
- > May relate to rumination and anxiety².
- > May relate to goal attainment in open-ended world³.

Category	Scrambled mean (Proportion)	Intact mean (Proportion)
1	38	3
2	20	5
3	15	12
4	13	17
5	7	12
6	5	20
7	3	30

Time from start of free association (s)	Baseline	Continued	Separated	New Story Alone
30	0.31	0.36	0.35	0.41
60	0.30	0.34	0.32	0.31
90	0.29	0.32	0.32	0.32
120	0.29	0.32	0.32	0.30
150	0.30	0.31	0.31	0.30

The diagram illustrates the Paragimn paradigm flowchart. It starts with a 'Free association' box, followed by an arrow to a box labeled 'Original story'. This box is divided into two sections: 'Intact' (red border) and 'Scrambled' (blue border). An arrow points from 'Original story' to a box labeled 'Interference', which is divided into 'Situation' (pink border) and 'ToM' (yellow border). Another arrow points from 'Interference' to a 'Free association' box, followed by an arrow to a 'Questions' box. Below the 'Original story' and 'Interference' boxes, there are four example boxes connected by a horizontal line. The first box is labeled 'No interference' and has a red border on the left and a blue border on the right. The second box is labeled 'Is Jeff's shirt pink?' and has a pink border on the left and a yellow border on the right. The third box is labeled 'Since then, my wife and I have had to live in darkness.' and has a green border. The fourth box is labeled 'How many triangles?' and has a blue border. Below each example box is a legend: 'Intact & Baseline' (red icon), 'Scrambled' (blue icon), 'Situation' (pink icon), 'ToM' (yellow icon), 'New Story' (green icon), and 'Geometry' (blue icon).

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graph LR
    FA1[Free association] --> OS[Original story]
    OS --> I[Interference]
    I --> FA2[Free association]
    FA2 --> Q[Questions]
    
    OS --- L1[ ]
    I --- L1
    L1 --- N[No interference]
    L1 --- S[Is Jeff's shirt pink?]
    L1 --- NS[Since then, my wife and I have had to live in darkness.]
    L1 --- G[How many triangles?]
    
    N --- L2[ ]
    S --- L2
    NS --- L2
    G --- L2
    L2 --- L[Legend]
    
    subgraph Legend
        IB[Intact & Baseline]
        S[Scrambled]
        Sit[Situation]
        ToM[ToM]
        NS[New Story]
        Geo[Geometry]
    end

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Context maintenance and retrieval model (CMR)
adapted from Polyn et al. (2009)

Figure 3 displays BOLD (z-scored) time series for four brain regions (AG, PCC, HC, A1) in the pre-story and post-story conditions. The x-axis represents TR offset from word onset (-8 to 10). The y-axis represents BOLD (z-scored) (-0.05 to 0.05). The regions are color-coded: AG (green), PCC (blue), HC (red), and A1 (black). The pre-story condition is shown on the left, and the post-story condition is shown on the right. The AG region shows a slight increase in BOLD signal in the post-story condition, while the PCC region shows a slight decrease. The HC and A1 regions show minimal changes.

- > Persistence cannot be explained by intentional retrieval or with volatile short-term memory representations.
- > Regions associated with episodic memory retrieval show increased activity and reinstatement of events during persistence.
- > Persistence may be driven by a slowly-changing, gated representation which biases memory retrieval and thought generation.
- > *Next: direct test of persistence on retrieval; implement deep context; compare neural activity during persistence with episodic retrieval.*

1. Bellana et. al (2022), 2. Andrews-Hanna et al. (2022),
3. Honey et al. 2023 (2024), 4. Polyn et al. (2009)