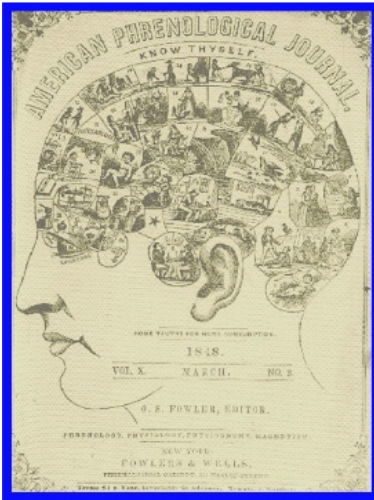


기억의 인지신경과학 - 연결성을 중심으로

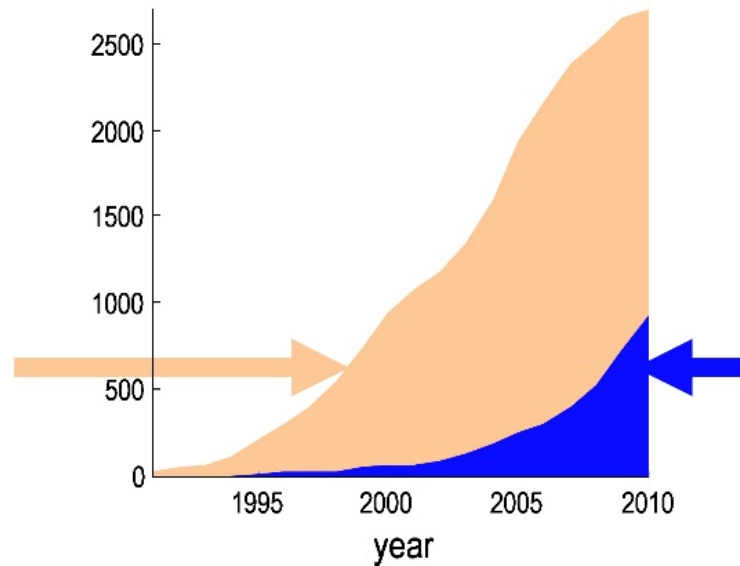
유정선

1. Localizationism vs. Connectionism

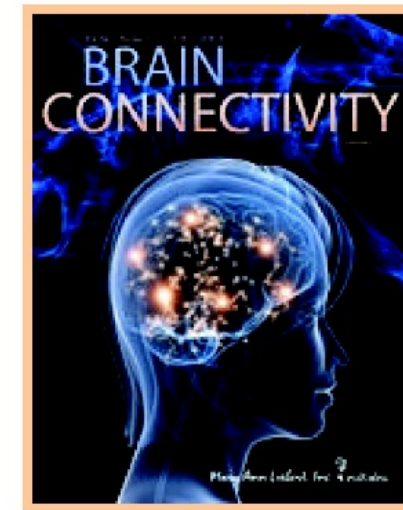
Functional segregation
(activation)



publications per year



Functional integration
(connectivity)

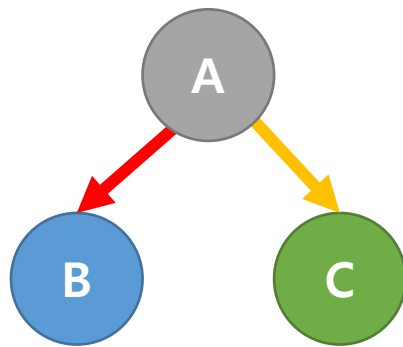
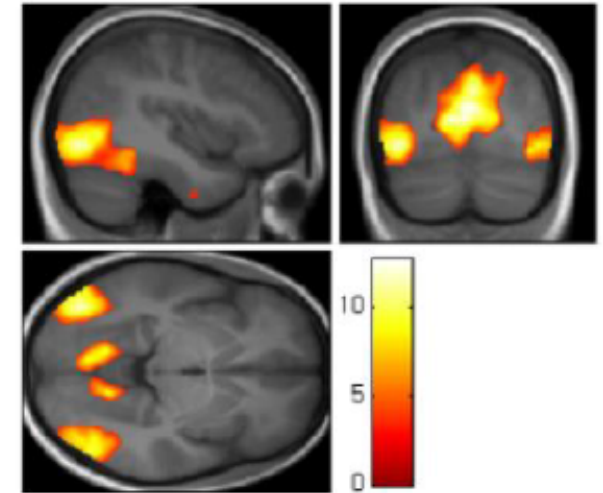


1. Limitations of traditional GLM

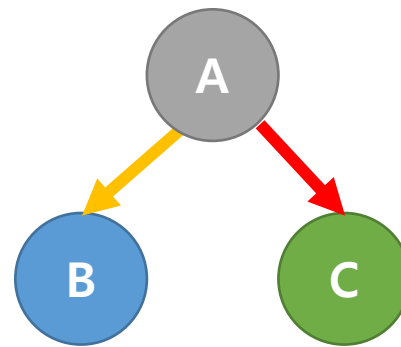
1. Assumes that regions act independently

2. Less sensitivity

(Pantazatos et. al, 2014; Woo et. al, 2014)



Control group



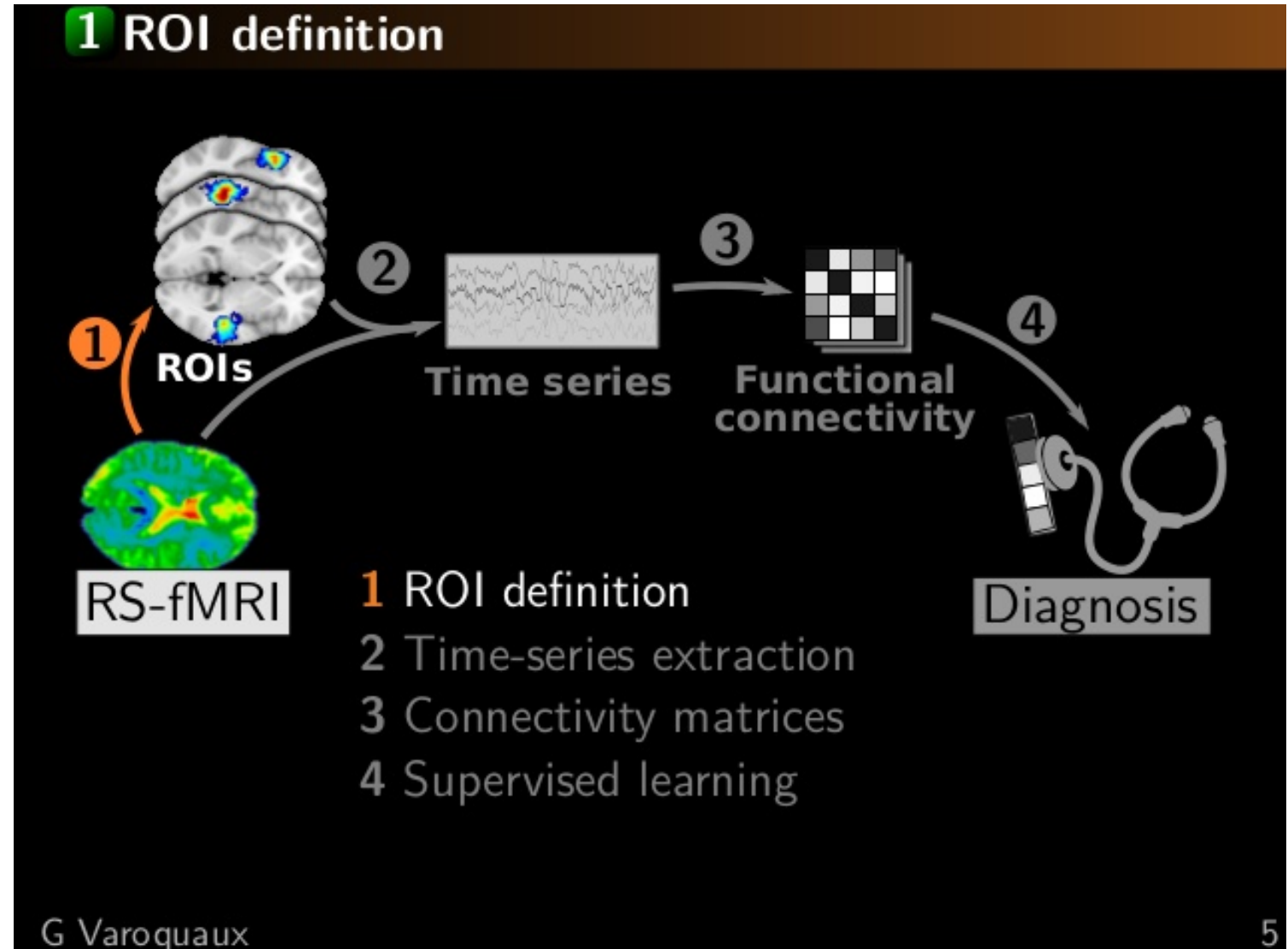
Patient group

2. Connectivity

1. **Functional Connectivity:** correlation between blood oxygenation level-dependent (BOLD) activity of two regions during an experimental condition (Park & Friston, 2013)
2. **Effective Connectivity:**
 - e.g. Dynamic causal modeling (DCM), Granger causality

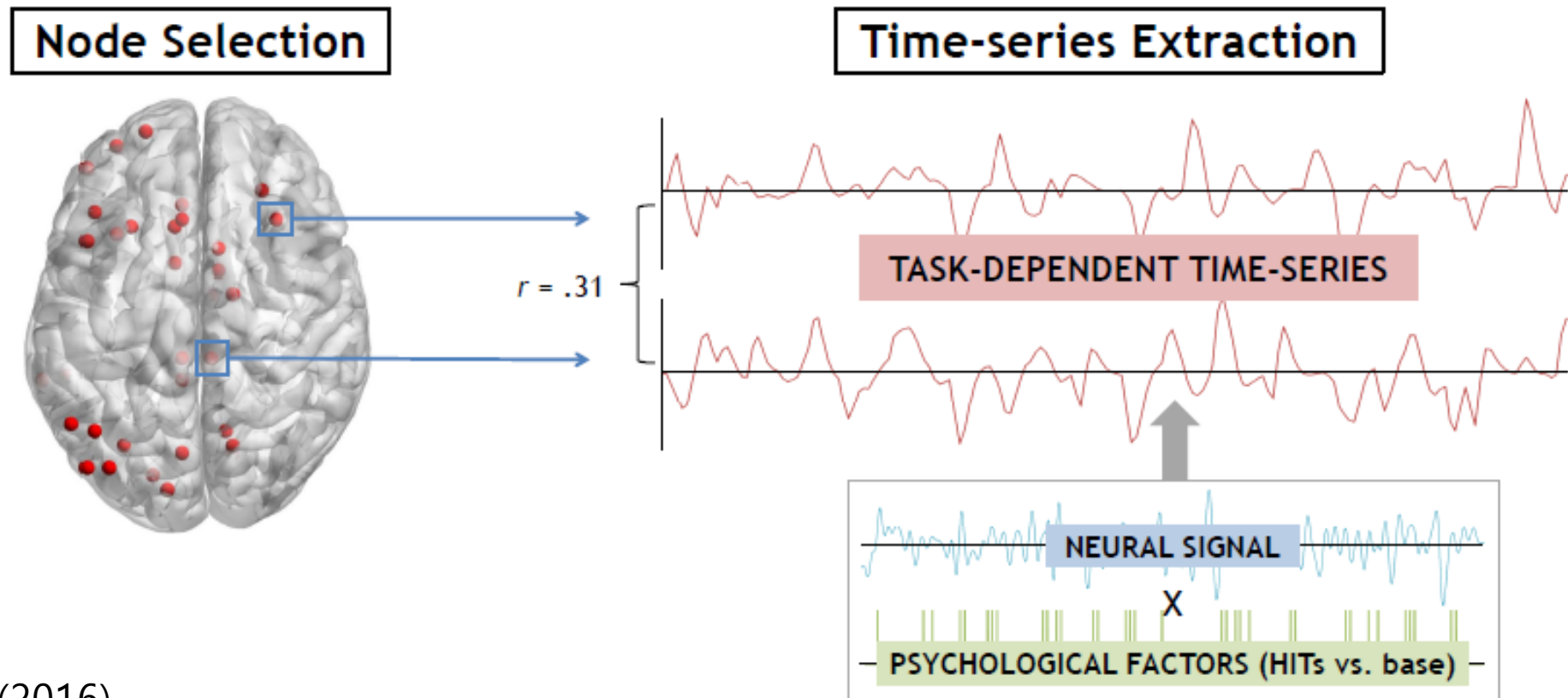
3. Functional Connectivity

1) Resting state

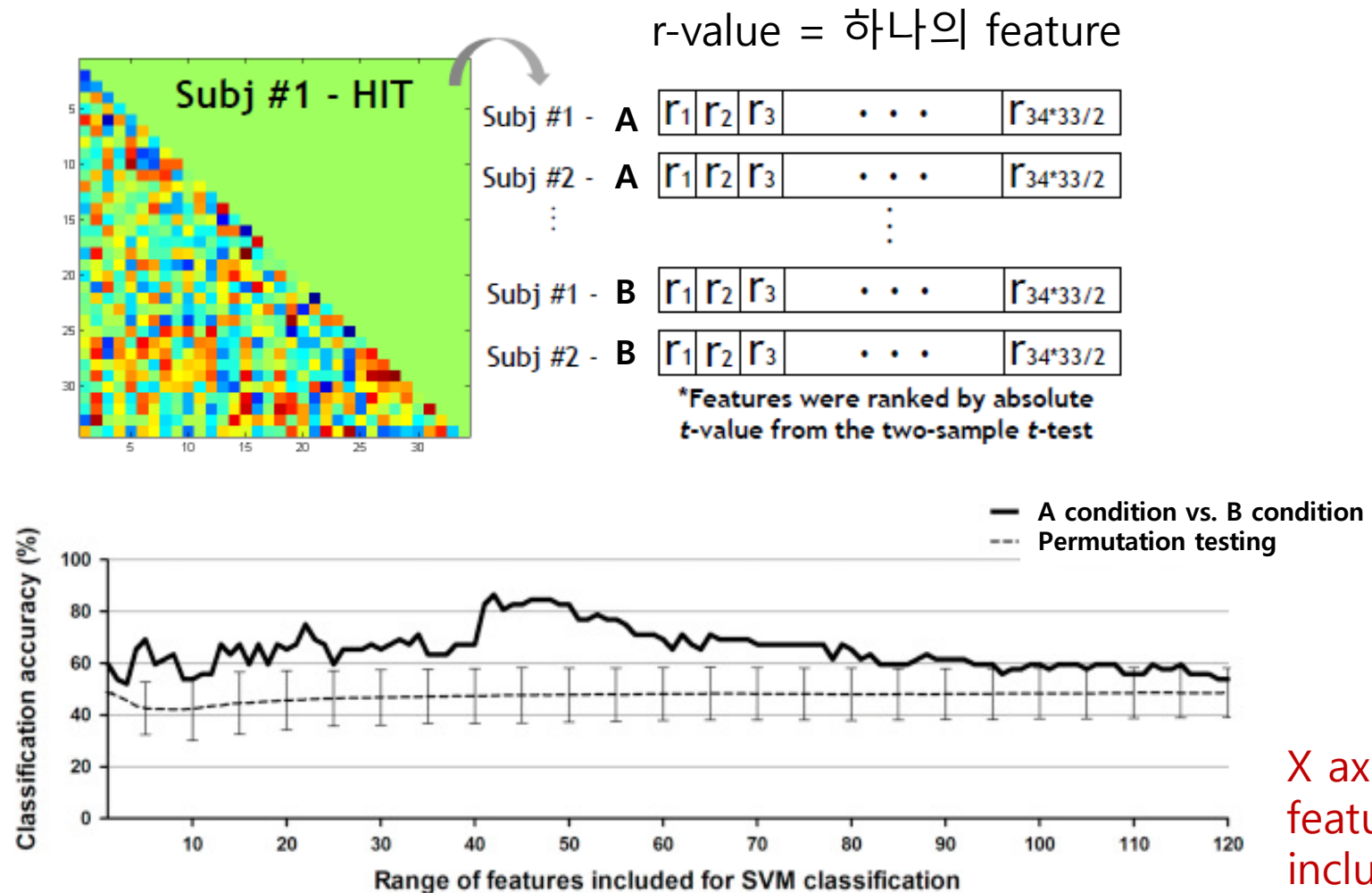


3. Functional Connectivity

2) Task-based: Psychophysiological Interaction (PPI)

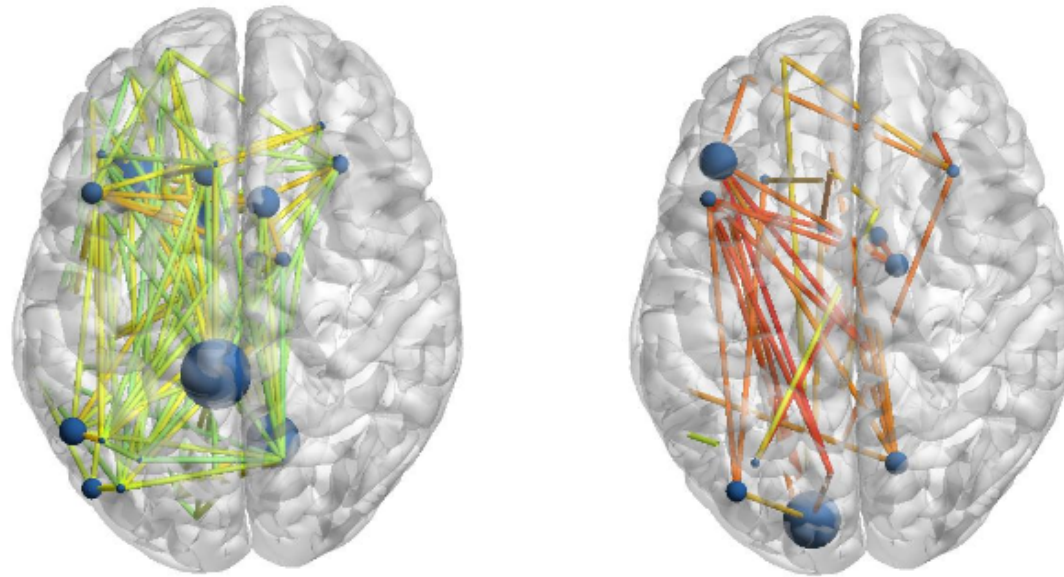


4. 응용 1: fcMVPA (functional connectivity Multivariate Pattern Analysis)



5. 응용 2: Graph Theory

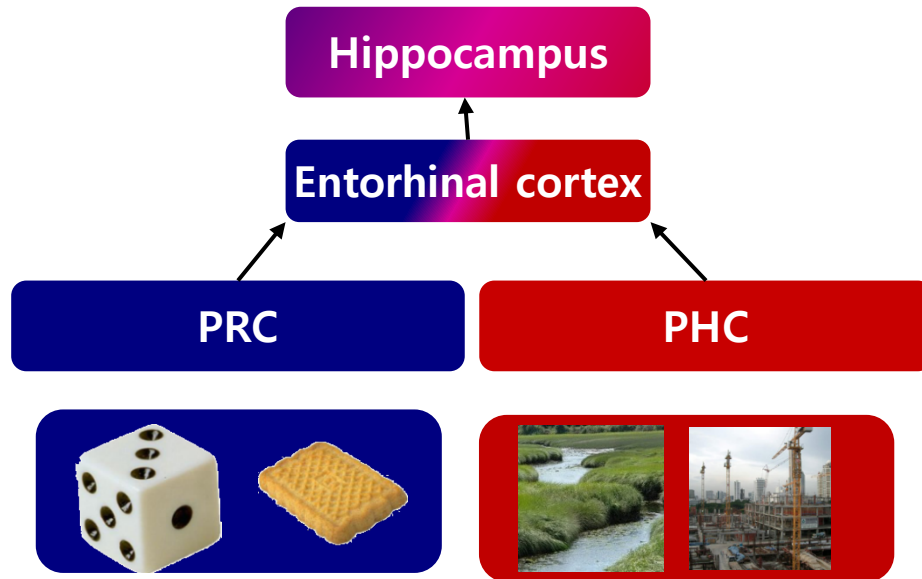
- Node, Edge
- Centrality measures: betweenness centrality (BC), degree centrality (DC), eigenvector centrality (EC) (Landherr et. al, 2010)



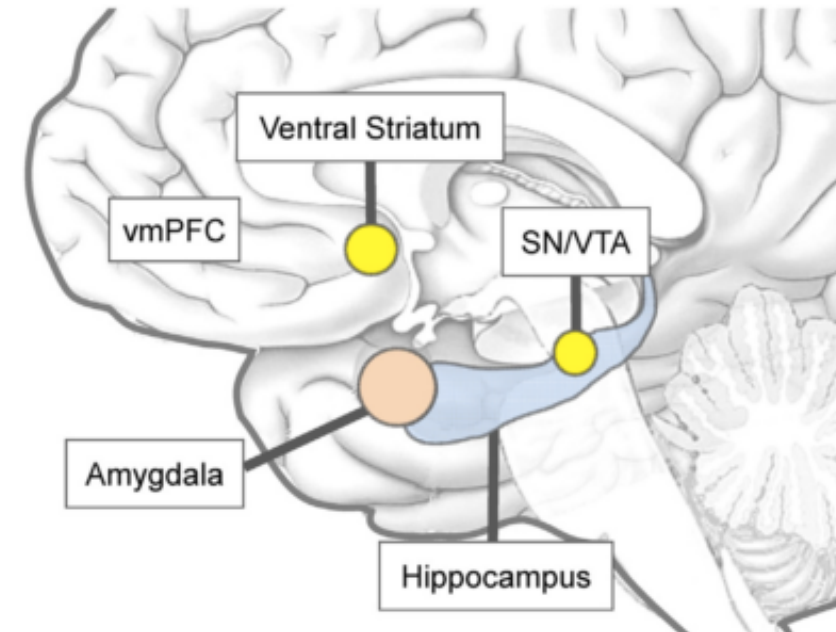
A condition vs. B condition

5. 연구 소개

1. Object memory vs. Scene memory encoding



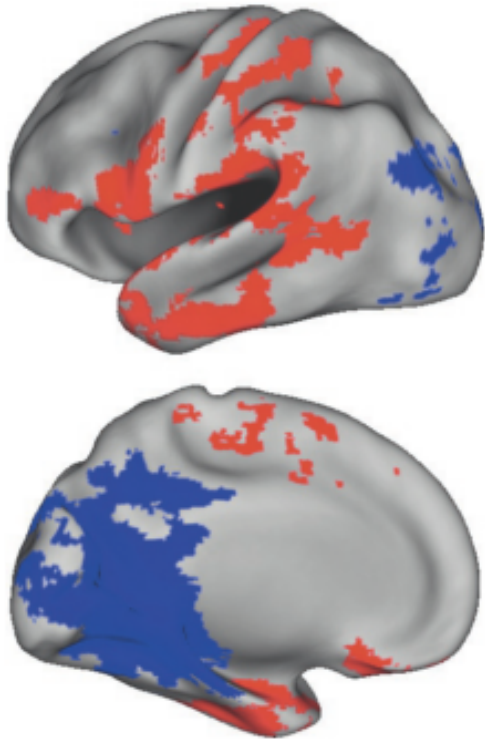
2. Reward enhances memory encoding



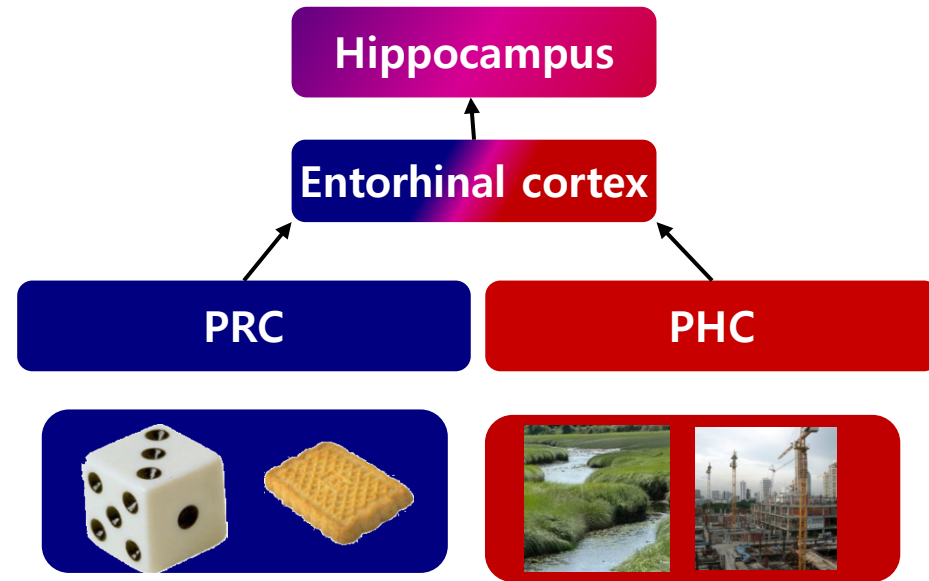
Result: objects benefit more from reward (value) than scenes during memory encoding

Possible explanation: 'PMAT' theory (Ritchey et. al, 2015)

A



■ PRC > PHC ■ PHC > PRC



References

- Nah, Y., Shin, N. Y., Yi, S., Lee, S. K., & Han, S. (2018). Altered task-dependent functional connectivity patterns during subjective recollection experiences of episodic retrieval in postpartum women. *Neurobiology of learning and memory*, 150, 116-135.
- Landherr, A., Friedl, B., & Heidemann, J. (2010). A critical review of centrality measures in social networks. *Business & Information Systems Engineering*, 2(6), 371-385.