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## Memory

Memory is not unitary.

1. Weights (long-lasting, requires re-activation) versus activations (short-term, already active, can influence processing).
2. Weight-based: Cortex shows priming, but suffers catastrophic interference. Hippocampus can learn rapidly without interference using sparse, pattern-separated representations.
3. Activation-based: Cortex shows priming, but can't do working memory.
4. Activation- and weight-based interactions.

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## But first: Why does this happen?

A-not-B

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## Memory

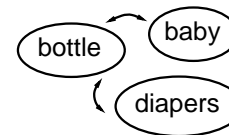
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## Prefrontal vs. posterior cortex

Posterior cortex: interactive representations w/spreading activation



### *Advantages*

Semantic associations  
Inference (diapers → baby)  
Schema (parenting)

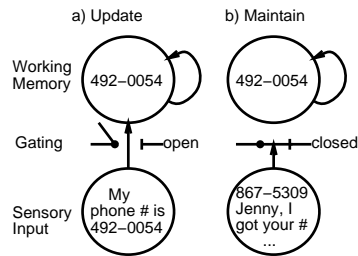
### *Disadvantages*

Memory confusion

Prefrontal cortex: isolated reps, maintenance without activation spread

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## Also Need Dynamic Gating



Dopamine provides dynamic gating mechanism.

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## Why does this happen?

A-not-B

Card-sorting

- Perseverate with first behavior.
- Better performance in gaze/answering questions.
- Weight- and activation-based memory interactions.
- Weak activation-based memory sufficient for gaze/answering questions.

Sims.

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3. Activation-based: Cortex shows priming, but can't do working memory. *Prefrontal cortex can maintain representations using isolated representations.*
4. Activation- and weight-based interactions. *Lead to perseveration, dissociations in performance.*