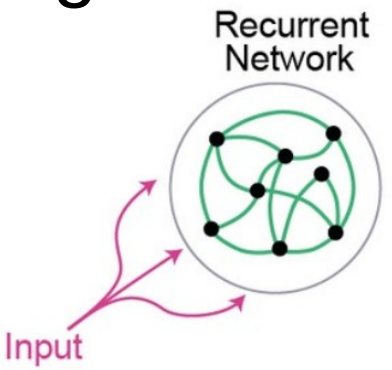
Project 2

- Project: Hopfield-like learning and forgetting
  - Linear network model:

$$\frac{dr_i}{dt} = -r_i + \sum_{j=1}^{N} M_{ij} r_j + s_i + \xi$$



  - Two mechanisms for forgetting:
    - Random changes

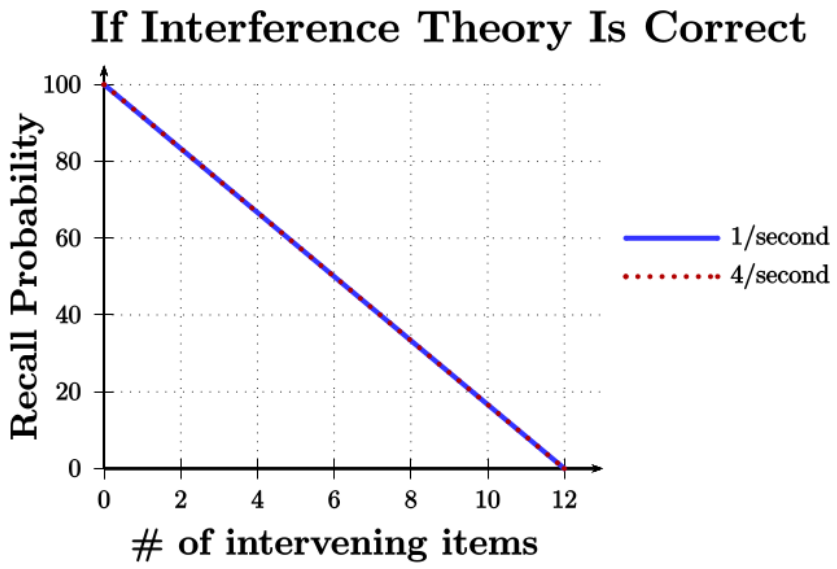
$$dX = \frac{\omega^2}{2\sigma^2}(\mu - X)dt + \omega dW$$

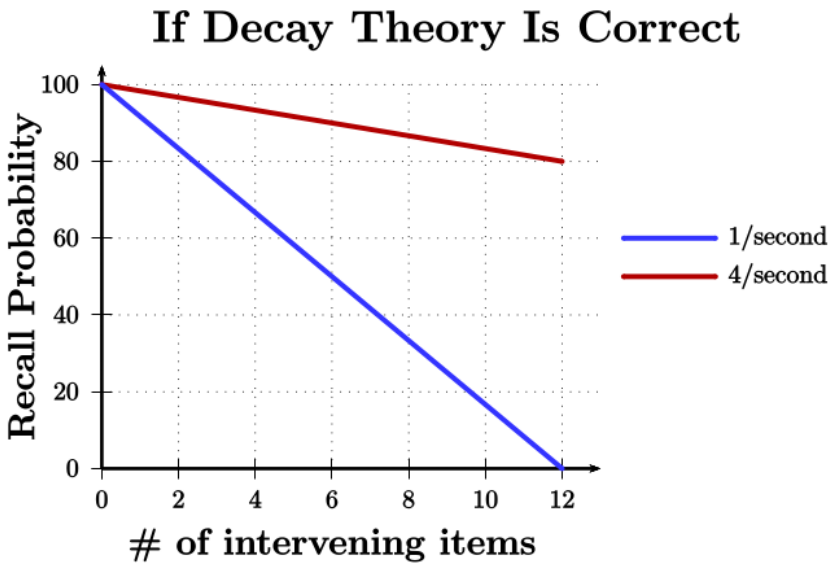
    - Overwriting

$$\mathbf{M}_{\text{new}} = (1-\gamma)\mathbf{M}_{\text{old}} + \gamma \frac{\alpha}{N_{\text{Stim}}} \sum_{k=1}^{N_{\text{Stim}}} \mathbf{s}_k \mathbf{s}_k^T$$

Project 2

- Two big theories of forgetting: **Interference theory** and **trace decay theory**.





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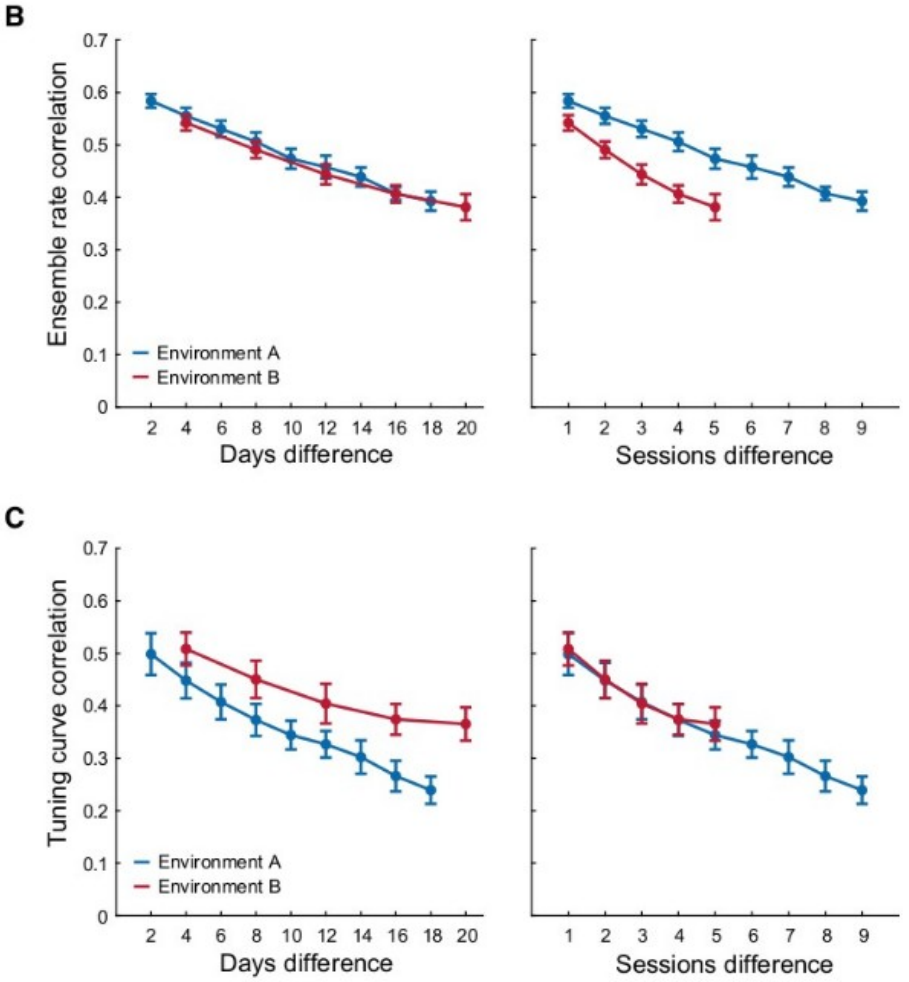
- Can they be reproduced in our simple model?

Project 2

- Recent findings:

Rate changes with time

Tuning changes with session



Geva et al, 2023