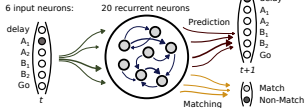
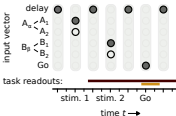


## A Recurrent neural network



## B Trial structure & tasks



**Prediction task:**  
Predict upcoming input vector

**Matching task:**  
Report  $\alpha = \beta$  Match (M) or Non-Match (NM)

**Stimuli are correlated:**  
75% of trials:  $\alpha = \beta$

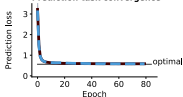
## C Network types:

**Pred. single:** Loss =  $L_{\text{pred}}$

**Match single:** Loss =  $L_{\text{match}}$

**Dual task:** Loss =  $L_{\text{pred}} + L_{\text{match}}$

## D Prediction task convergence



## E Matching task convergence

