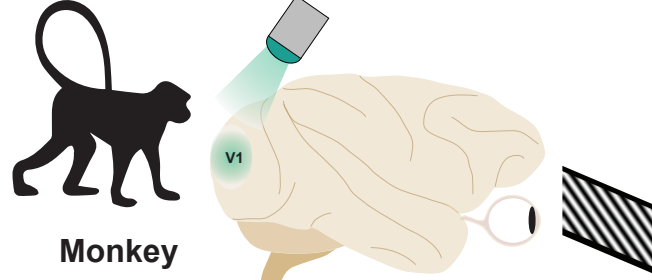
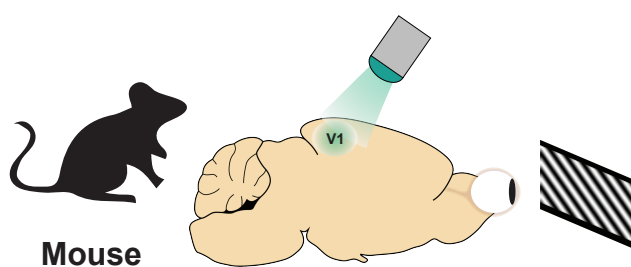
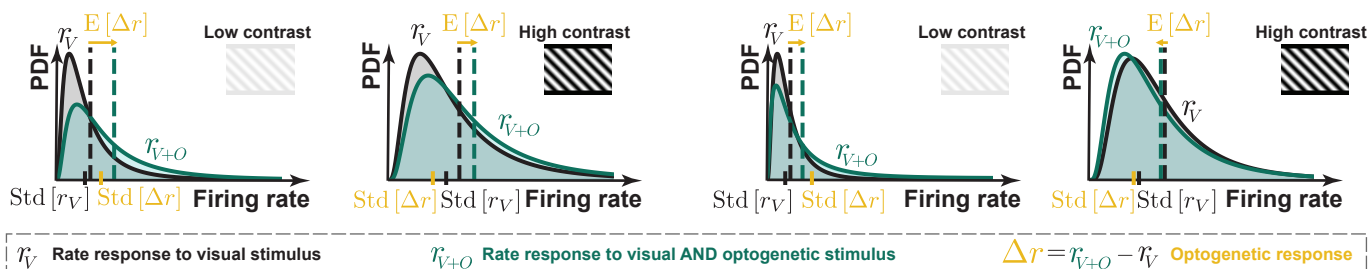


Species



Phenomenon



Weak Reshuffling

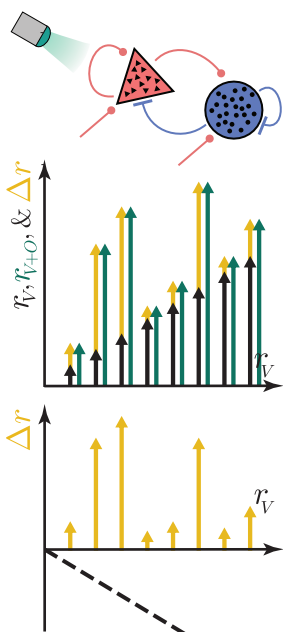
- Opto stim to E cells causes net excitation: ($E[\Delta r] > 0$)
- However, typical opto responses are
 - Much larger than mean opto response: ($\text{Std}[\Delta r] \gg E[\Delta r]$)
 - Large, comparable to typical visual responses: ($\text{Std}[\Delta r] \approx \text{Std}[r_V]$)

Strong Reshuffling

- Opto stim to E cells causes no net excitation: ($E[\Delta r] \approx 0$)
- Does not change firing rate distribution
- However, typical opto responses are
 - Large, comparable to typical visual responses: ($\text{Std}[\Delta r] \approx \text{Std}[r_V]$)

Mechanism

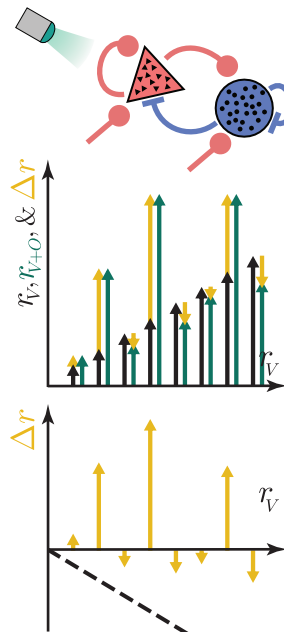
Weak Coupling



No Reshuffling

- Opto stim is purely excitatory
- Positive correlation between visual response r_V and opto response Δr

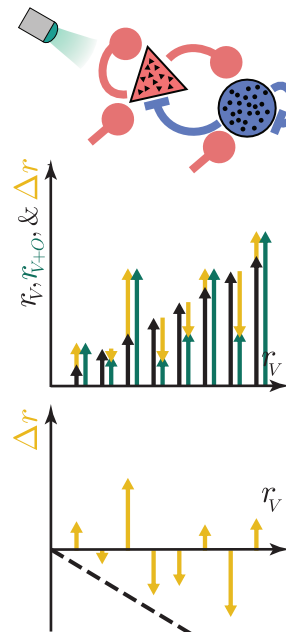
Moderate Coupling



Weak Reshuffling

- No correlation between visual response r_V and opto response Δr

Strong Coupling



Strong Reshuffling

- Negative correlation between visual response r_V and opto response Δr

The strong coupling required for strong reshuffling can be more biologically plausible (weaker) with structured connectivity than with random connectivity