

**A****Presence of cue identity coding**

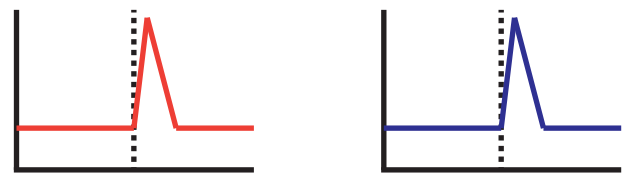
Outcome coding:

Identity not coded

Separate populations

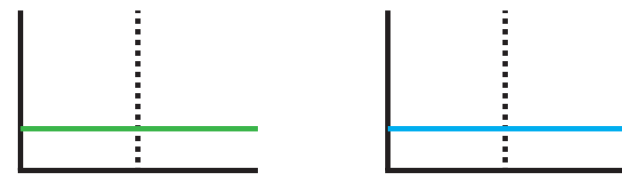
Overlapping populations

Unit A:



L1+

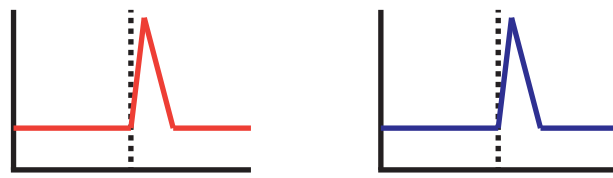
S1+



L2-

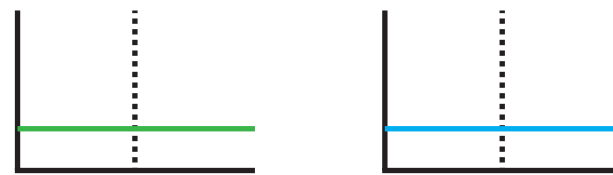
S2-

Unit A:



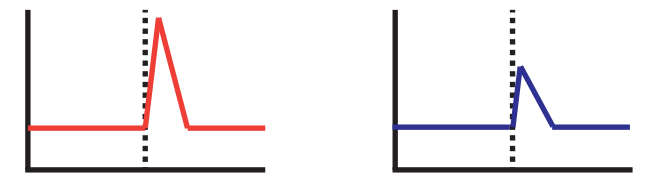
L1+

S1+



L2-

S2-



L1+

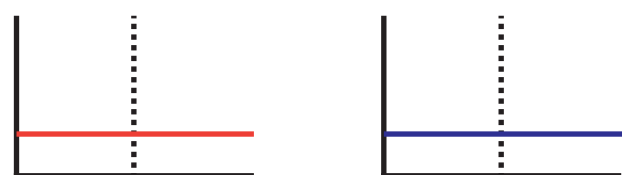
S1+



L2-

S2-

Unit B:



L1+

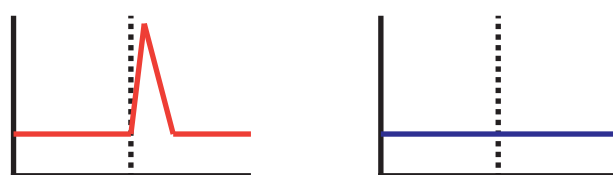
S1+



L2-

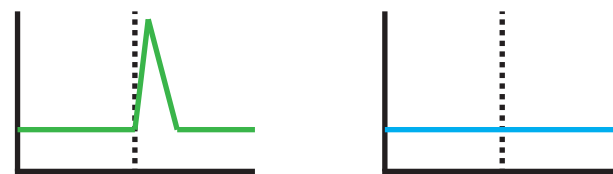
S2-

Unit B:



L1+

S1+



L2-

S2-

Cues used:

L1+: light reward-available

L2-: light reward-unavailable

S1+: sound reward-available

S2-: sound reward-unavailable

Identity coding:

**B****Persistence of cue identity coding**

Transient coding

Separate populations

Overlapping populations

Identity coding:

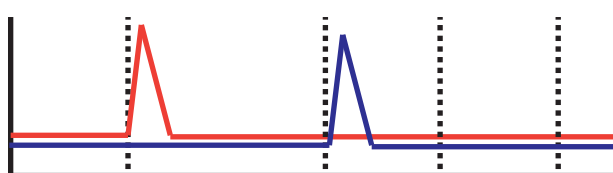


Cue-ON

NP

Out

OFF

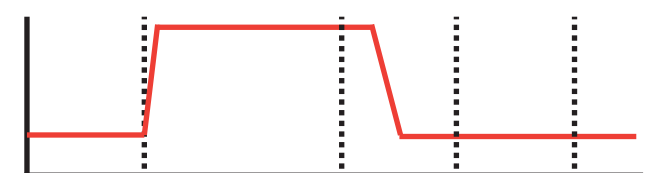


Cue-ON

NP

Out

OFF



Cue-ON

NP

Out

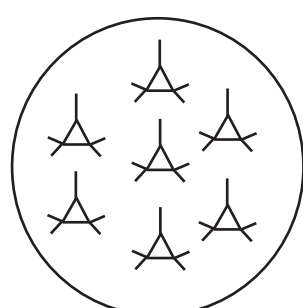
OFF

**C****Quantification of coding across units and time epochs**

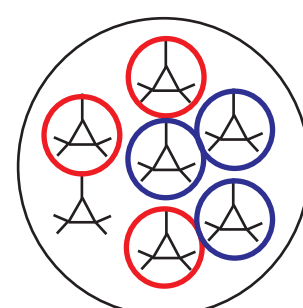
No comparison possible

Separate populations

Overlapping populations

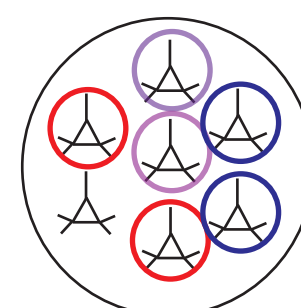


$$r = N/A$$



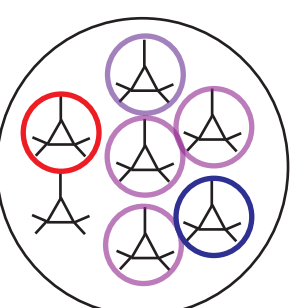
$$r < 0$$

independent



$$r = 0$$

joint



$$r > 0$$