

Neuronal populations	Firing activities based on Type-I 5-HT neurons	Firing activities based on Type-II 5-HT neurons
5-HT	Phasic increase of firing rates for both reward during cue. No change in baseline activities for punishment between cue and outcome (Cohen et al.,2015, Li et al., 2016, Liu et al. 2014)	Phasic increase in reward and punishment during cue and outcome respectively. The baseline activity during reward remains the same between cue and outcome (Cohen et al.,2015, Li et al., 2016, Liu et al. 2014)
DA	Phasic decrease during outcome for punishment (Tan et al., 2012). Phasic increase during cue for reward (Cohen et al., 2012)	No change in the baseline activities between reward and punishment (Cohen et al.,2015)
DRN-GABA	Phasic increase during outcome for punishment (Li et al., 2016)	Phasic increase and decrease during outcomes for punishment and reward respectively (Li et al., 2016)
DRN Glu	Same as DA activities in cue during reward (McDevitt et al., 2014)	Same as DA activities in cue during reward (McDevitt et al., 2014)
VTA-GABA	Phasic rise at the outcome during punishment. Exponential rise from cue to outcome during reward (Tan et al., 2012)	Activities increase from cue to outcome for reward and punishment (Cohen et al, 2012)