



In The Name Of God
HW02
Advanced Neuroscience

MohammadAmin Alamalhoda
97102099

■ Step 1

□ Q1

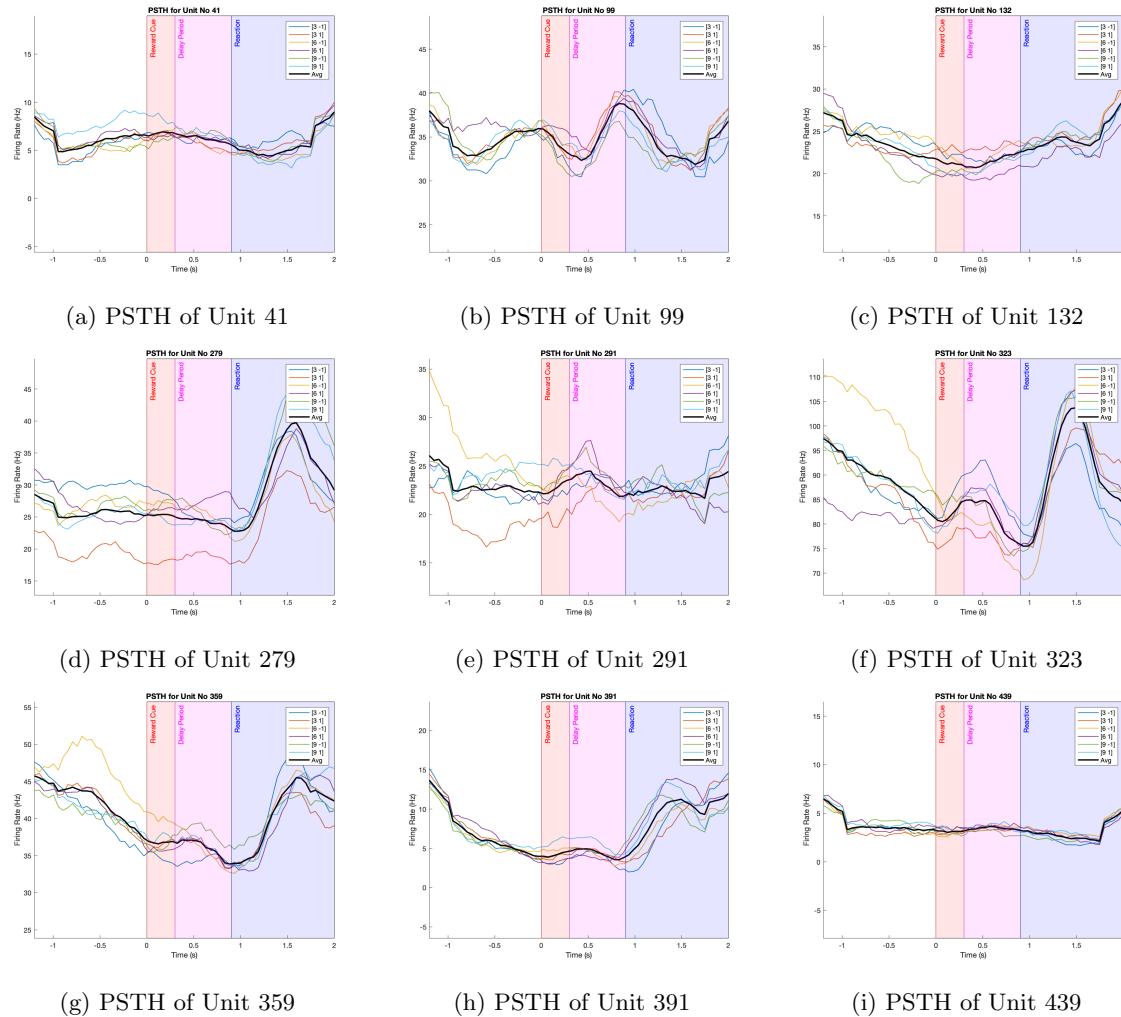


Figure 1: PSTH of Different Units



□ Q2

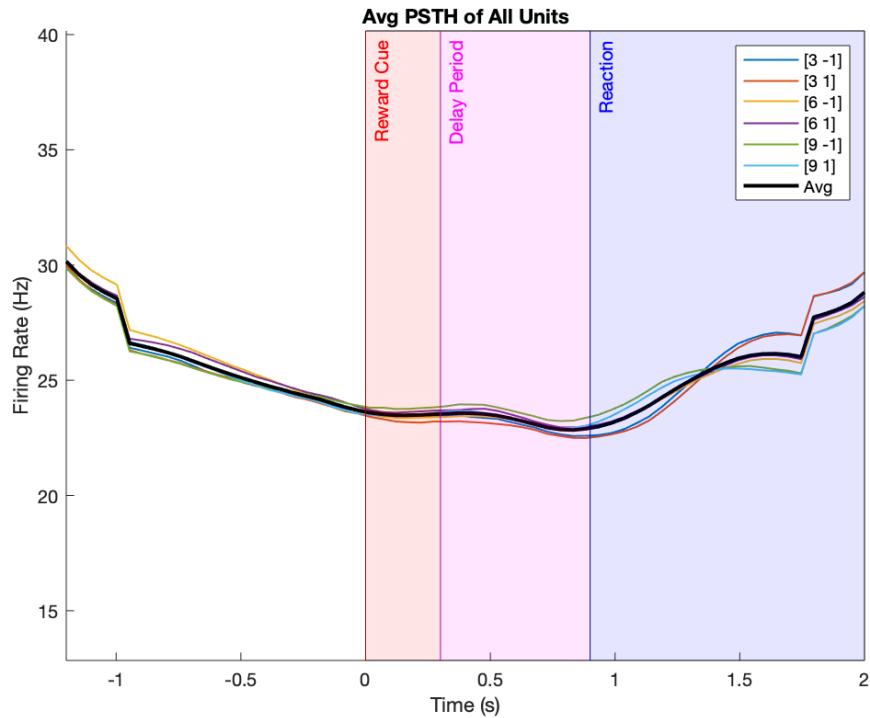


Figure 2: PSTH of Average of all Units

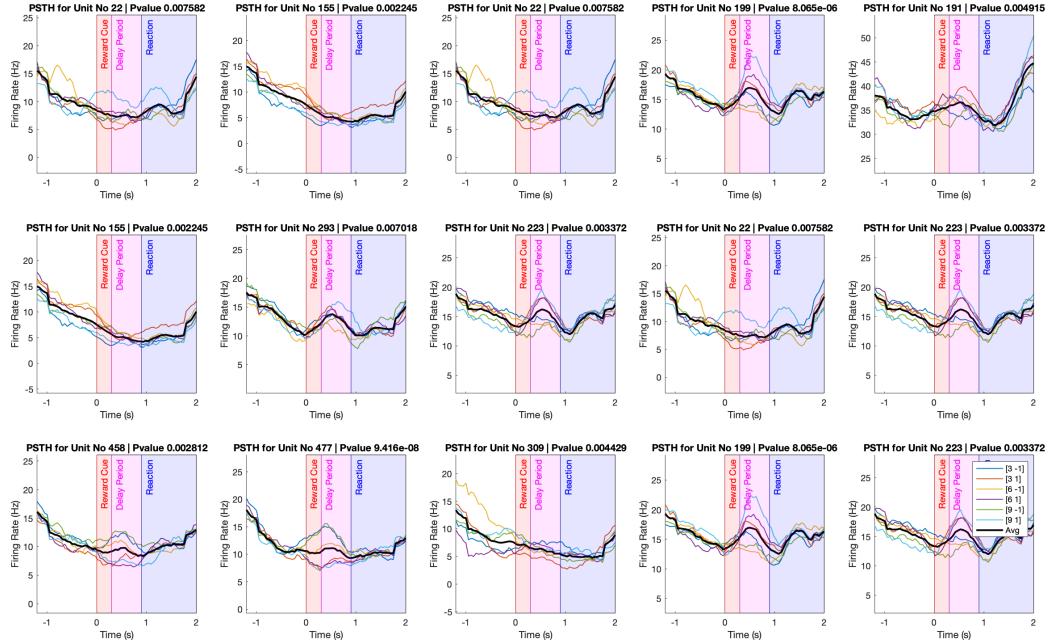
As can be seen in Figure 2, average PSTH of all the units differ from the PSTH of some units which are likely to encode the neural activity with their firing rate. So, I think that maybe just a few of the units are encoding the neural activity with their firing rate.



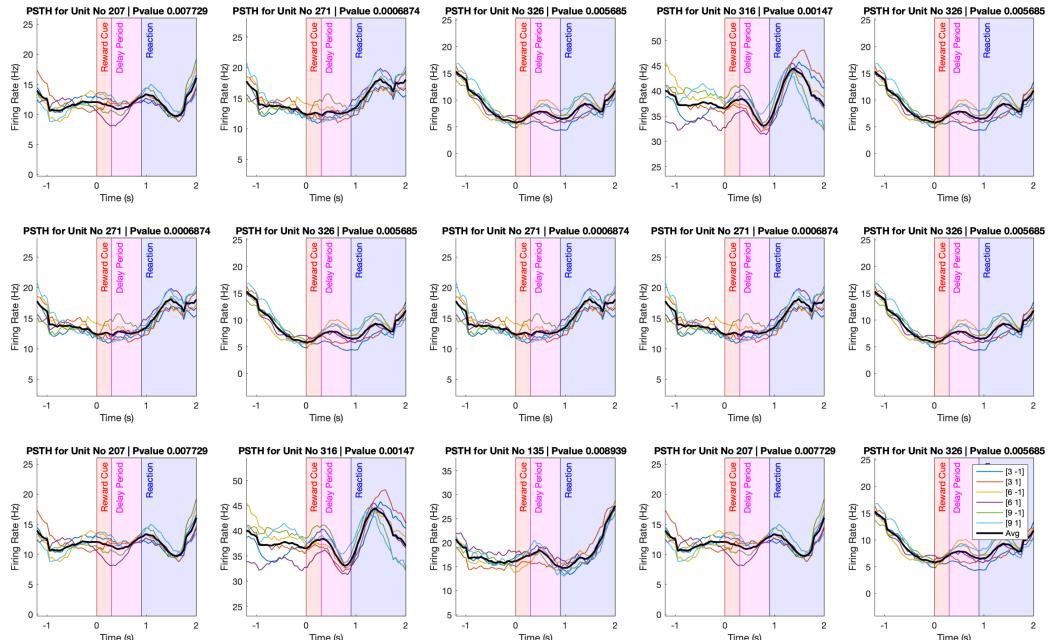
■ Step 2

□ Single Units

Left and Right Cue



(a) No Shuffle



(b) Shuffled

Figure 3: PSTH of Some Units with $pValue < 0.01$

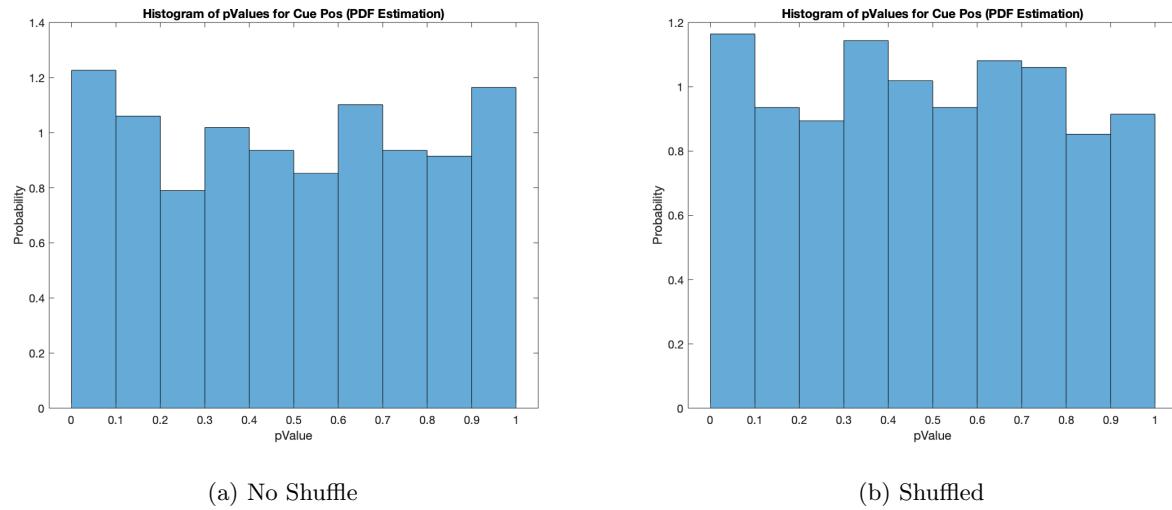


Figure 4: Histogram (PDF) of pValues for Cue Left/Right

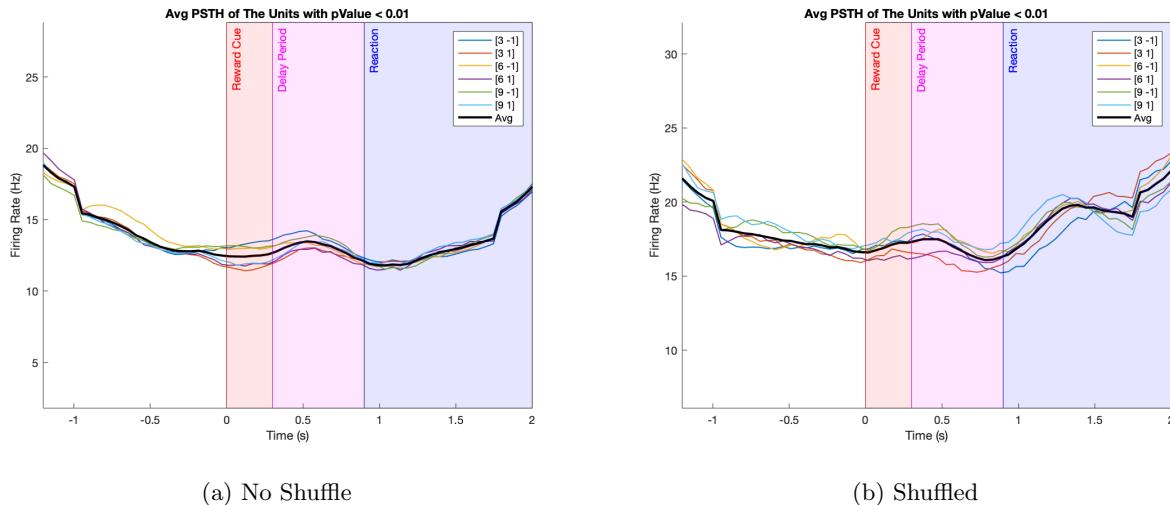


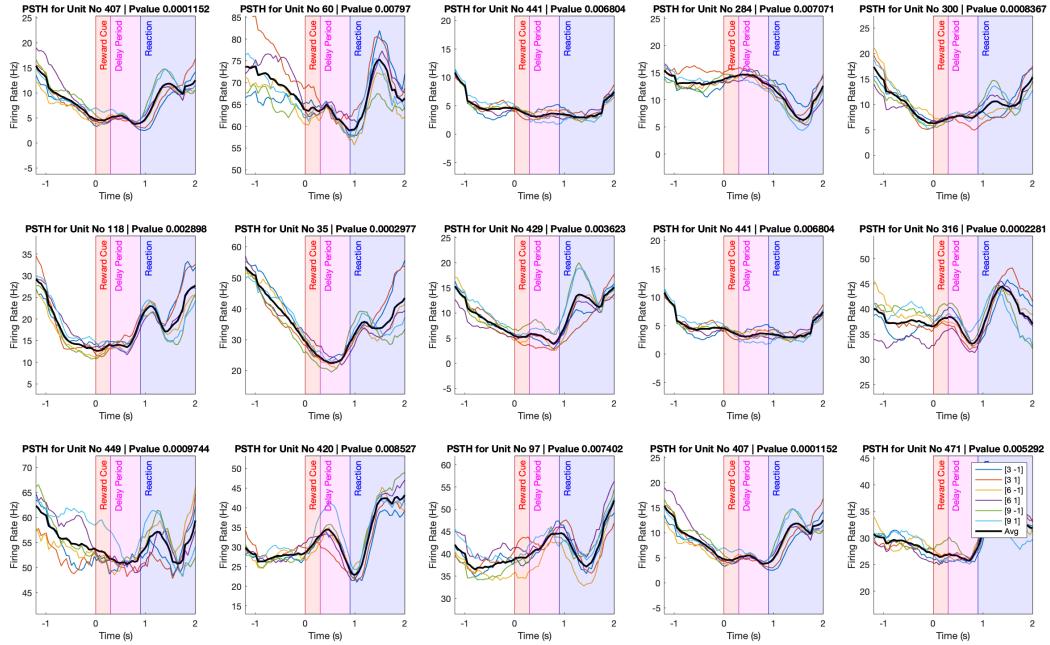
Figure 5: Average PSTH of The Units with pValue < 0.01

Table 1: Average pValue of all Units

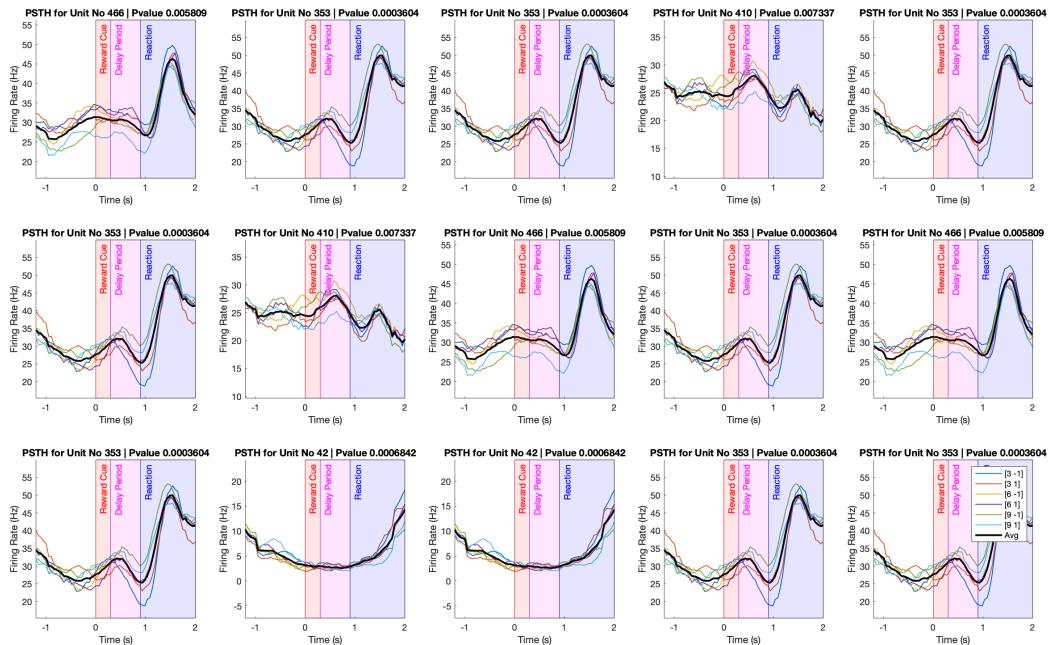
No Shuffle	Shuffled
0.4944	0.4880



Reward Expected Value



(a) No Shuffle



(b) Shuffled

Figure 6: PSTH of Some Units with pValue < 0.01

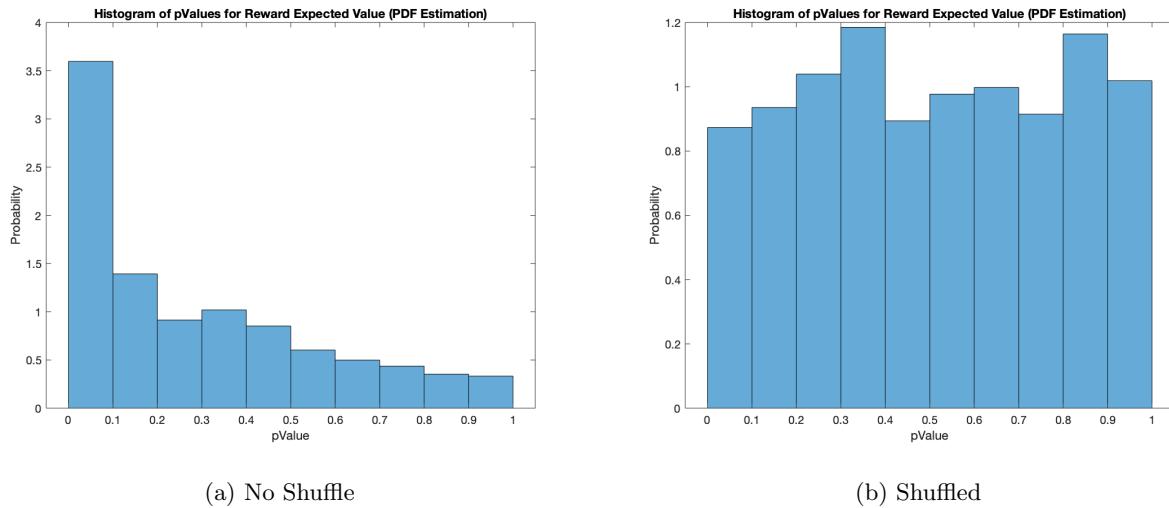


Figure 7: Histogram (PDF) of pValues for Cue Left/Right

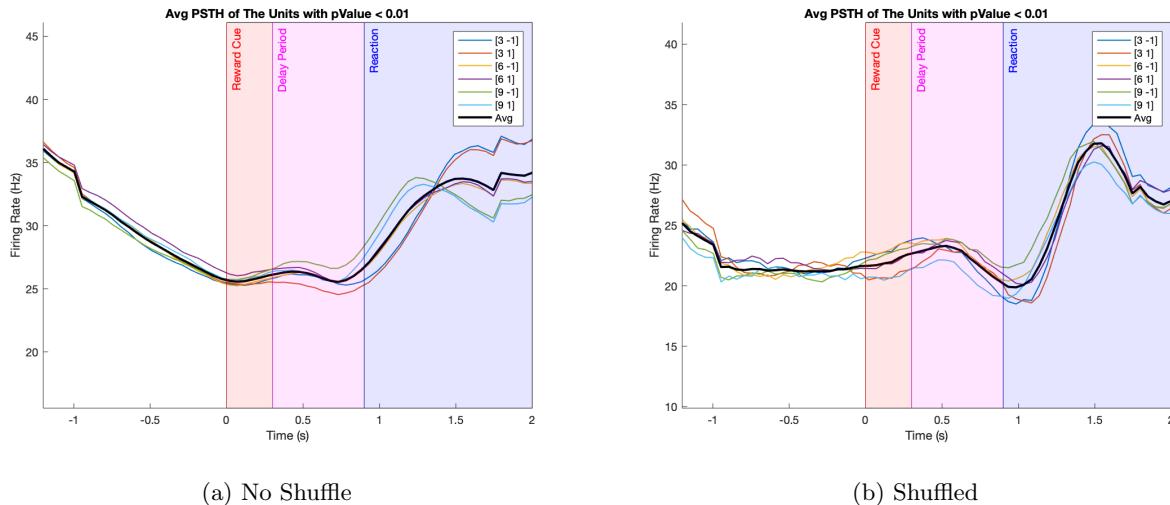


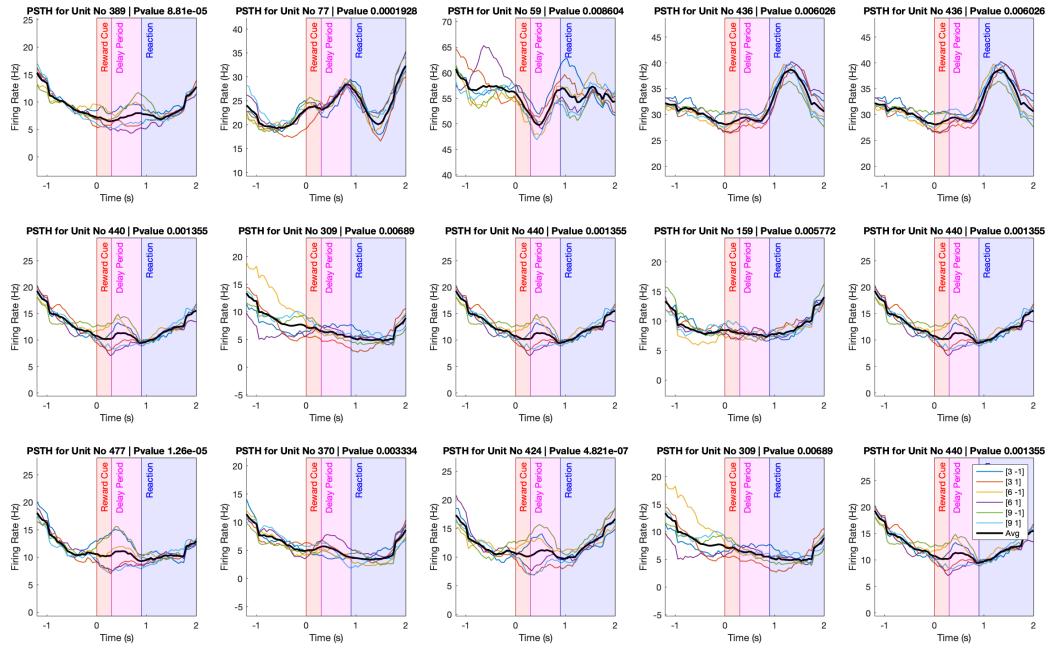
Figure 8: Average PSTH of The Units with pValue < 0.01

Table 2: Average pValue of all Units

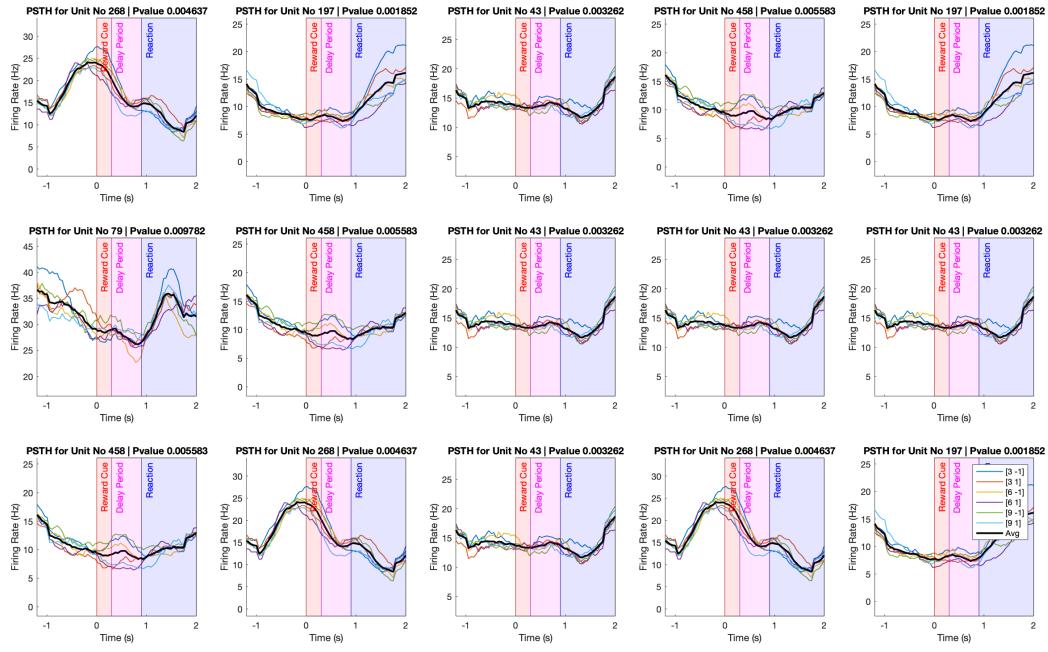
No Shuffle	Shuffled
0.2883	0.4976



All 6 Conditions



(a) No Shuffle



(b) Shuffled

Figure 9: PSTH of Some Units with pValue < 0.01

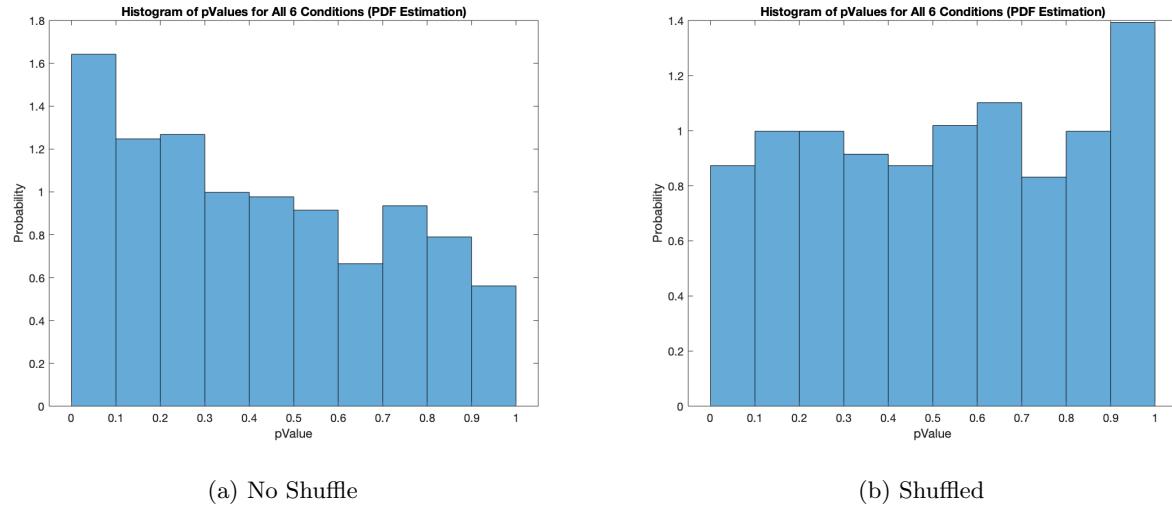


Figure 10: Histogram (PDF) of pValues for Cue Left/Right

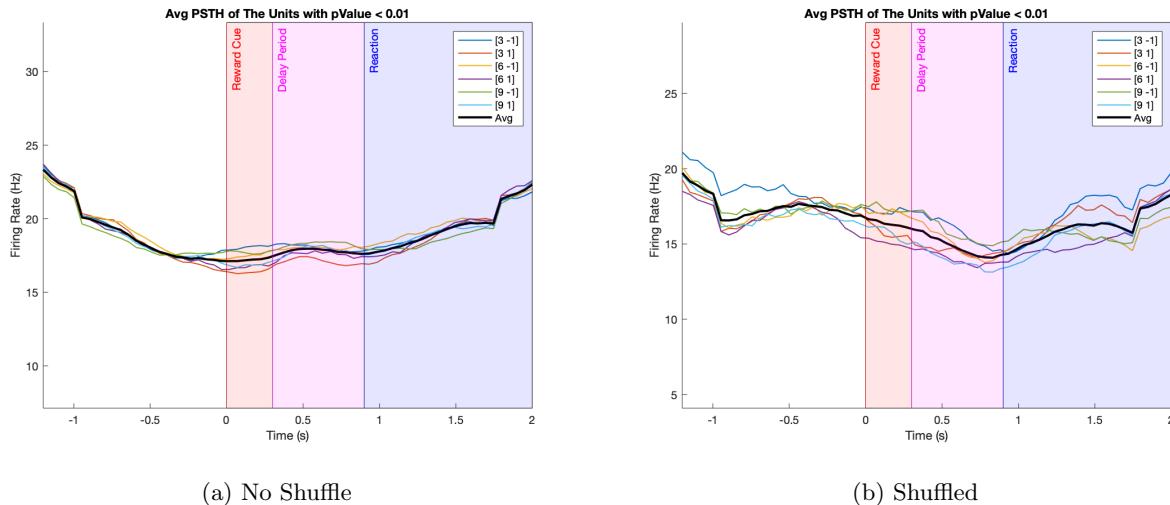


Figure 11: Average PSTH of The Units with pValue < 0.01

Table 3: Average pValue of all Units

No Shuffle	Shuffled
0.4215	0.5060