With Type-I 5-HT neurons Arc **Punishment** Reward a **Connection type VTA** DRN DRN VTA VTA DRN **VTA VTA** DRN **VTA** DA 5-HT **GABA GABA** Glu 5-HT **GABA GABA** Glu DA DA-> 5HT→ 100. 100. VTA Glu (-) 00 24.32 9.58 1.56 0.53 10.98 5.35 5HT→ 00 27.04 0.76 **GABA** DA 5HT→ 100. 100. (-)1.61 0.53 (-)Glu (+) 00 24.74 9.57 00 15.17 11.02 2.03 0.70 5-HT→ 5HT→ 100. 100. VTA 5HT→ 9.58 1.56 0.53 11.02 1.97 0.70 Glu (-) 00 24.31 00 14.80 **GABA** DA 5HT→ 100. 100. (-)(+)24.74 9.57 1.61 0.53 20.25 11.21 1.37 0.69 Glu (+) 00 00 DA→ 5HT→ 100. 100. VTA 5HT→ Glu (-) 00 23.64 20.18 3.47 0.53 00 26.95 11.76 7.14 0.75 **GABA** DA 5HT→ 100. 100. (+) (-)Glu (+) 00 24.06 20.19 3.52 0.53 00 14.87 11.74 3.79 0.70 5-HT→ 100. 5HT→ 100. **VTA** 5HT→ Glu (-) 20.18 3.47 0.53 11.74 3.73 0.70 00 23.64 00 14.49 **GABA** DA 5HT→ 100. 100. (+) (+)00 24.06 20.19 3.52 0.53 11.56 3.16 0.69 Glu (+) 00 20.10 5HT→Glu (-) 100. b 100. 10.85 2.63 0.52 13.71 2.85 00 16.08 00 10.88 0.68 5HT→Glu (+) 100. 100. 5.09 00 13.30 10.95 1.96 00 9.28 13.84 2.12 6.72 100. 100. C 00 10.97 1.86 13.86 1.97 0.00 12.26 0.00 00 8.36 d 100. 100. 00 14.76 3.18 1.37 0.00 3.18 1.63 0.00 00 10.00 100. 100. е 00 12.52 0.33 0.90 0.00 0.47 1.10 0.00 00 8.58 f 100. 100. 00 2.27 0.17 0.45 0.00 1.52 0.22 0.52 0.00 00 100. 100. g 00 0.00 7.39 0.00 0.00 7.77 0.00 0.00 00 0.00 100. h 100. 00 14.76 0.51 1.37 0.00 0.70 1.63 0.00 00 10.00 100. 100. 00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 00 0.00 j 100. 100. 00 0.00 0.00 0.00 0.00 0.00 0.00 00 0.00 0.00 k 100. 100. 00 0.00 0.00 0.00 00 0.00 0.00 0.00 0.00 0.00 5HT→DA (-) 100. 100. 2.06 0.51 3.71 00 12.16 9.82 00 8.43 2.66 0.67 100. 5HT→DA (+) 100. 00 2.06 0.51 3.69 12.18 9.83 00 8.45 2.67 0.67