Appendix:

List of parameter values used in the models described in various sections. ‘r’ denotes ‘reward.’

|  |  |  |  |
| --- | --- | --- | --- |
| parameter | Values used in place-based model | Values used in cue-based model | Values used in integrated model |
|  | 0.95 | 0.95 | 0.95 |
|  | 1.7 | 1.6 | -- |
|  | 0.9 | 0.9 | 0.9 |
|  | -- | -- | 0.5 |
| η for training critic | 0.05 for r=1 | 0.01 for r=1 | 0.0005 for r = 2 (place-based module) |
|  | 0.0001 for r =-1 | 0.0001 for r=-1 | 0.00001 for r = -1 (place-based module) |
|  |  |  | 1e-6 for r = 2 (cue-based module) |
|  |  |  | 1e-7for r = -1 (cue-based module) |