Understanding the role of distance, direction and cue salience in an associative model of landmark learning.

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Contribution

SC: Formulated overall concept. Wrote and read paper.

DF: Designed the model, ran simulations. Wrote and read paper.

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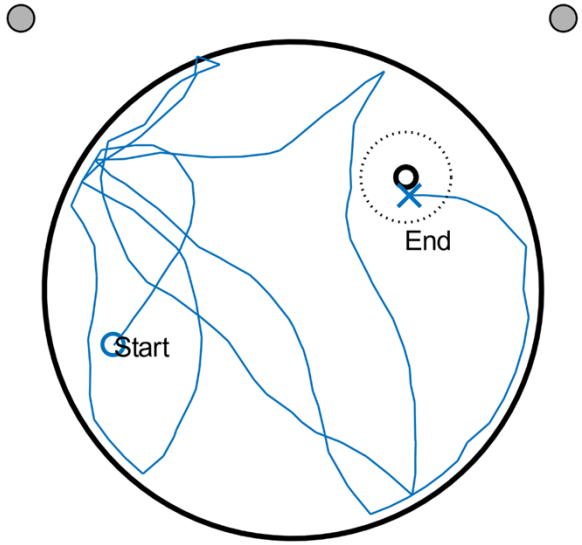
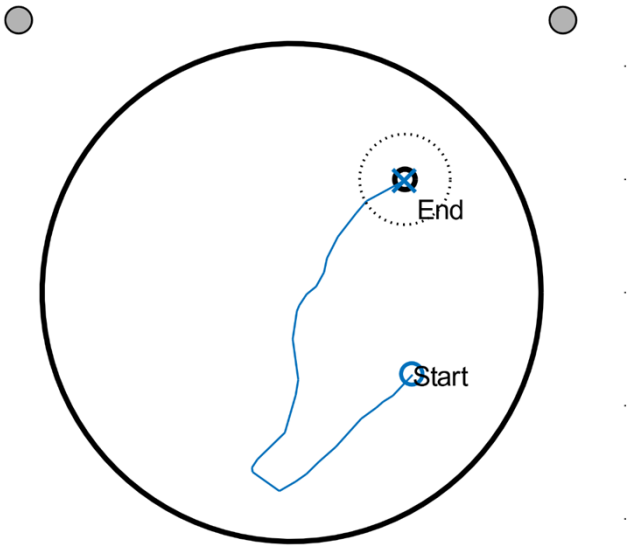
Supplement 1. Example of a simulated rat's swimming path

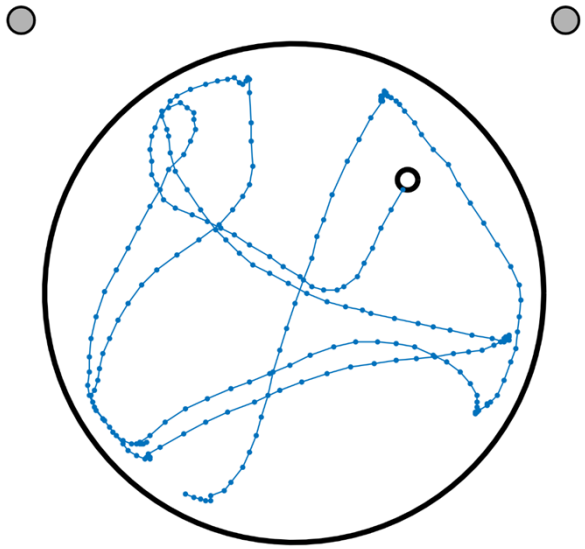
S1a. Untrained rat (simulated)



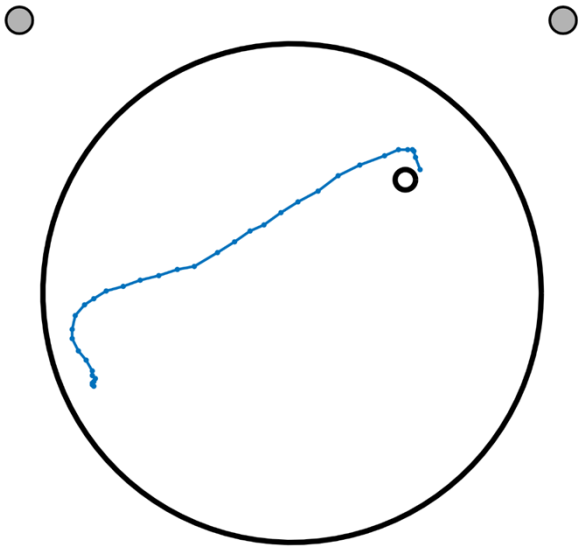
b. Trained rat (simulated)



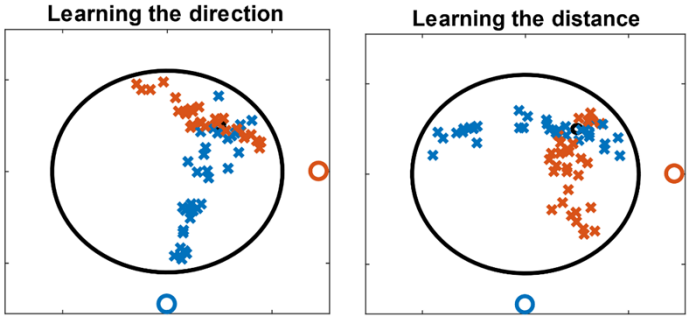
b. Untrained rat (experiment)

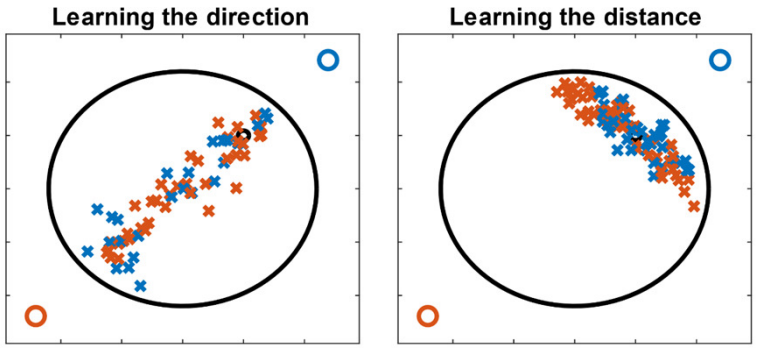


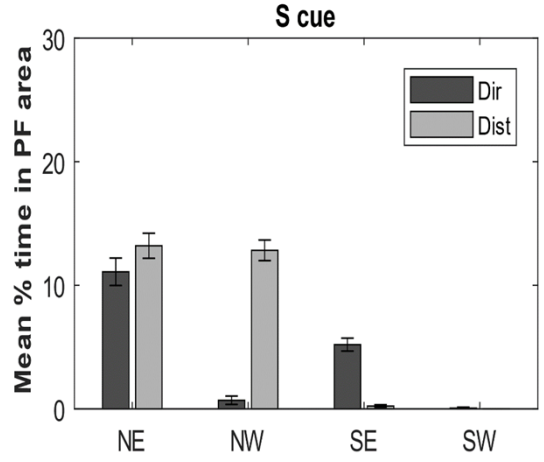
b. Trained rat (experiment)

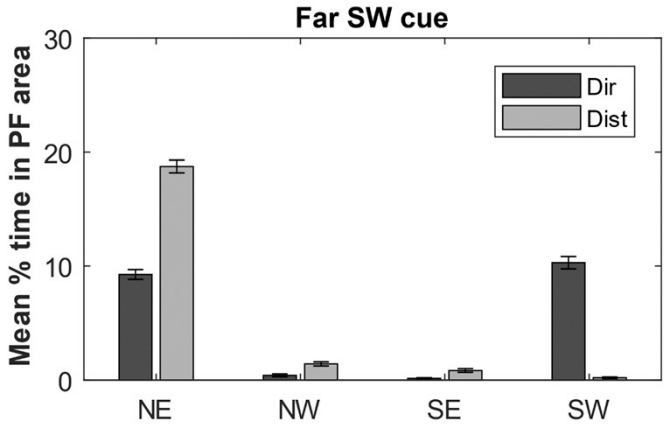


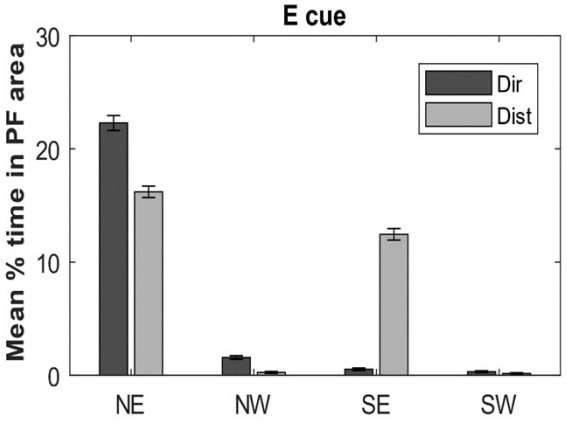
Supplement 2. Varying cue position changes searching dynamics depending on use of directional and distance information.





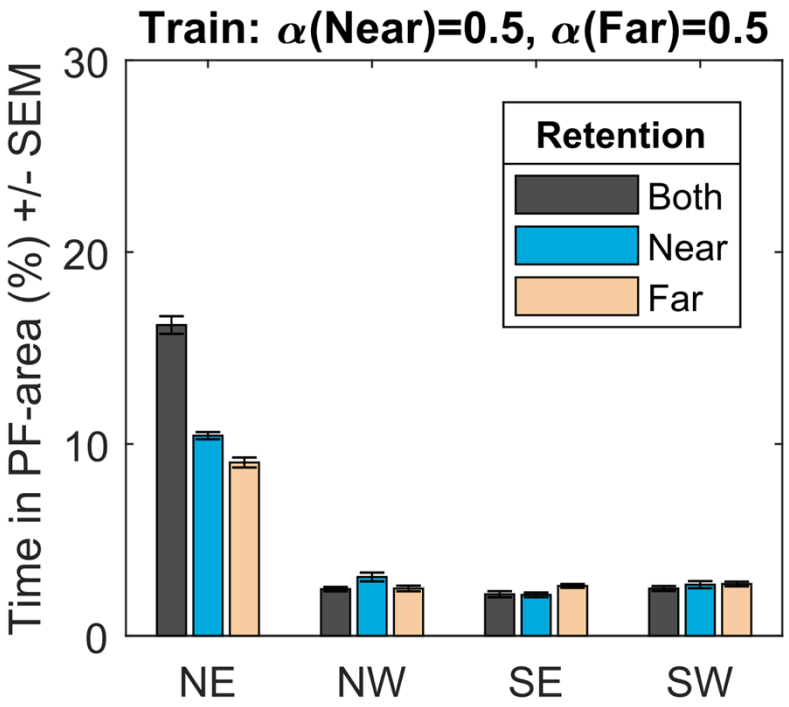






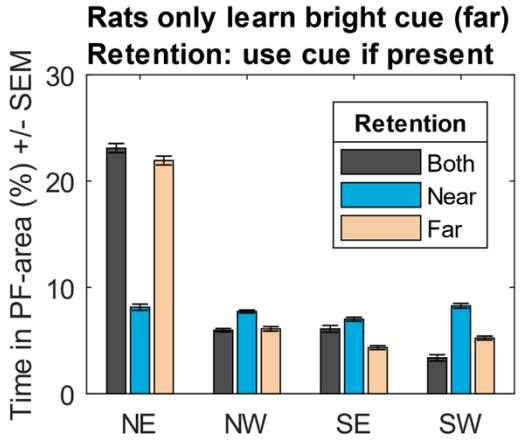
Supplement 3. Rat can distinguish cues independent of salience

S3. Equal cue saliences

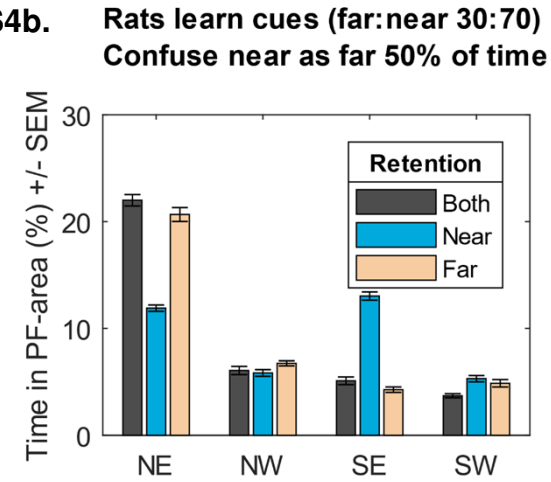


Supplement 4.

S4a.



S4b.



Supplementary Table 1

Swimming behavior model (AR random walk & controller)								
Parameter	A_1	A_2	F	K				
Value	0.174	0.153	0.95	0.5				
Rescorla Wagner learning model								
Parameter	α_1	α_2	β_{use}	β_{dir}	β_{dist}	λ_{use}	λ_{dir}	λ_{dist}
Value	0.5	0.5	0.2	0.2	0.2	0.33	1	1