Table 1

		Env 2		
Env 1		time	space	inactive
	time	90	16	165
	space	15	76	133
	inactive	159	159	X

Supplementary Table 1

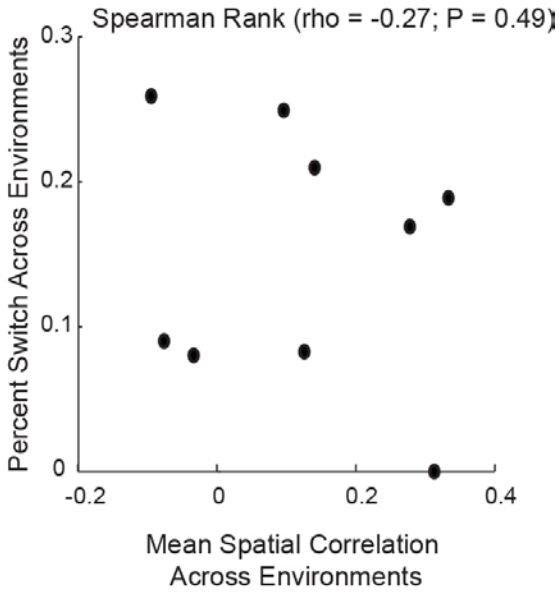
Number of neurons that encoded time, space or became inactive from environment 1 to environments 2 (including all track environment switches: invisible door, visible door, linear track, but not including classic conditioning to linear track switches) for nine mice.

Table 2

a

Mouse	% Only 1 Env	Spatial Corr Both	N	Sig Diff (Y/N)
1	83%	0.10 ± 0.52	9	N
2	82%	0.13 ± 0.35	13	N
3	73%	0.28 ± 0.49	30	Y
4	68%	0.14 ± 0.48	21	N
5	80%	0.31 ± 0.49	10	N
6	88%	0.33 ± 0.58	8	Y
7	57%	-0.08 ± 0.39	3	N
8	74%	-0.09 ± 0.29	8	N
9	91%	-0.03 ± 0.47	4	N
Mean		**0.12 ± 0.16**		

b



Supplementary Table 2

Characterization of spatial encoding neuron populations across track environment switches.

a. Percent of neurons with a spatial field in only environment 1 or 2 shown in column 2. Pearson's correlations (column 3, mean ± SEM) of the mean spatial activity patterns for spatial encoding cells (Mean DF/F versus track location across all trials) between environment 1 and environment 2 for nine mice; only including cells with spatial fields in both environments; includes all track environment switches: invisible door (mice 1-3), visible door (mice 4-6), linear track (mice 7-9), but not including classic conditioning to linear track switches. For statistical significance (column 5), a random shuffle distribution for each data set was generated by randomly shuffling the cell assignments for each mean track activity patterns from environment 1 with respect to environment 2 for the spatial encoding cell populations in each mouse. A P-value was defined as the ratio of the number of times out of 1,000 that the mean correlation across all spatial cells from the random shuffled distribution was at least as large as the mean correlation from the real data. Using this shuffle analysis, 7 out of 9 mice had mean spatial correlations across environments that were not significantly different from chance ($p>0.01$). Note that the spatial correlations (Column 3) describe a single cell's spatial correlation across environments, not coherence of the spatial representations between cells across environments. **b.** Among the cells encoding both environments (significant spatial or temporal field in environments 1 and 2)**,** the fraction of cells in each mouse that switched from encoding space to time or time to space from environment 1 to environment 2 shown as a function of the Pearson's correlations (column 3 of **a**).

Table 3

A

Mouse	% Only 1 Env	Temporal Corr Both	N	Sig Diff (Y/N)
1	86%	0.12 ± 0.23	5	N
2	95%	0.06 ± 0.28	5	N
3	76%	0.43 ± 0.14	14	Y
4	79%	0.61 ± 0.09	28	N
5	73%	-0.33 ± 0.10	21	N
6	18%	0.73 ± 0.09	19	Y
7	85%	0.40 ± 0.21	11	N
8	66%	0.50 ± 0.15	14	Y
9	78%	0.50 ± 0.19	9	N
Mean		**0.33 ± 0.11**		

Supplementary Table 3

Characterization of temporal encoding neuron populations across track environment switches.

Percent of neurons with a timing field in only environment 1 or 2 shown in column 2. Pearson's correlations (column 3, mean ± SEM) of the mean time activity patterns for time encoding cells (Mean DF/F versus time across all (correct) wait or rest trials) between environment 1 and environment 2 for nine mice; only including cells with timing fields in both environments; includes all track environment switches: invisible door (mice 1-3), visible door (mice 4-6), linear track (mice 7-9), but not including classic conditioning to linear track switches. For statistical significance (column 5), a random shuffle distribution for each data set was generated by randomly shuffling the cell assignments for each mean time activity patterns from environment 1 with respect to environment 2 for the time encoding cell populations in each mouse. A P-value was defined as the ratio of the number of times out of 1,000 that the mean correlation across all time encoding cells from the random shuffled distribution was at least as large as the mean correlation from the real data. Using this shuffle analysis, 6 out of 9 mice had mean temporal activity pattern correlations across environments that were not significantly different from chance ($p>0.01$). Note that the temporal correlations (Column 3) describe a single cell's temporal correlation across environments, not coherence of the temporal representations between cells across environments.