This and the following chapters are a modified version of a submitted manuscript.

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$_{wo}ut_inact.pdf[Chronicimagingduringstableperformanceofavirtual-navigationdecisiontask.]$**Chronic imaging during stable performance of a virtual-navigation decision task. a,**Sc
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$_seq_inact.pdf[Neuronalpopulationdynamicsandinactivationexperiments]$**Neuronal population dynamics and inact**

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$_seq_inactc).Theseresultswereobtaineddaysorweeksafterthemouseachievedplateaubehavioralperformance, suggestingthatP$
$learningphase.Theseresultswereinagreementwithearlierworkthatusedpharmacologicalmethodstoinactivatethe PPCandot$
$PPCactivitycouldbeinvolvedinthetransformationofthesensoryinformationintoabehavioralactionplanorinsomeaspectofv$
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$_all.pdf[Reorganizationofactivitywithinatrialacrossdays.]$**Reorganization of activity within a trial across days.**
$70cmshift)onasubsequentday.Shadingindicatesmeansem(n =$
$5mice; somelargeintervaldatapointshadfewerthan5mice, seeSupplementalFigureS1A).Thegrayshadedareaindicates95con$
$p <$
$10^-8, ANOVA.$**c,**$Fractionofcellsthathadasignificantpeakonthenotedday.Fractionvs.time :$
$p =$
$0.85, ANOVA.InpanelsC-$
$D, errorbarsindicatemeansem, n =$
$5, 5, 4micefor thetimeintervalsshown.$**d,**$Left :$
$Forcellswithasignificantpeakondaynanddayn+$
$x, thefractionofpeaksthatshiftedbygreaterthan35cm, 50cmand1m.Fractionmoved35cmvs.time :$
$p =$
$0.019, ANOVA.Center :$
$Forcellswithahighlysignificantpeakondayn, thefractionofcellsthatdidnothaveasignificantpeakondayn+$
$x.Fractionlostvs.time :$
$p <$
$10^-9, ANOVA.Right :$
$Forcellswithoutasignificantpeakofactivityondayn, thefractionofcellsthathadahighlysignificantpeakondayn+$
$x.Fractiongainedvs.time :$
$p =$
$0.96ANOVA.$
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$_all.pdf[Reorganizationofinformationabouttrial-typeacrossdays]$**Reorganization of information about trial-type across days a,**$Decodingaccuracyfortrialtypebasedo$
$p <$
$10-$
$11, ANOVA.$**e,**$Onagivenday, thecellswiththetop20andbottom20ofdecodingaccuracieswereidentified.Thedistributionsofdec$
$rightturntrials.Amodelweightwasdeterminedateachspatialbininthemaze, andthemeanweightwascalculatedforeachcell.$**g,**$E$
$typeinformation.Top :$
$meanfluorescenceimageofthecellbody.Bottom :$
$meanactivityofthecelloncorrectwhitecue-$
$leftturn(blue)andblackcue-$
$rightturn(red)trials.$**h,**$Onagivenday, thecellswiththetop20largestweightsforwhitecue-$
$leftturnandblackcue-$
$rightturntrialswereidentified.Thedistributionsoftrial-typeweightsareshownincomparisontothedistributionforallcellsafterintervalsof1, 10, and20days.$