Cumulative learning via the integration of related experiences

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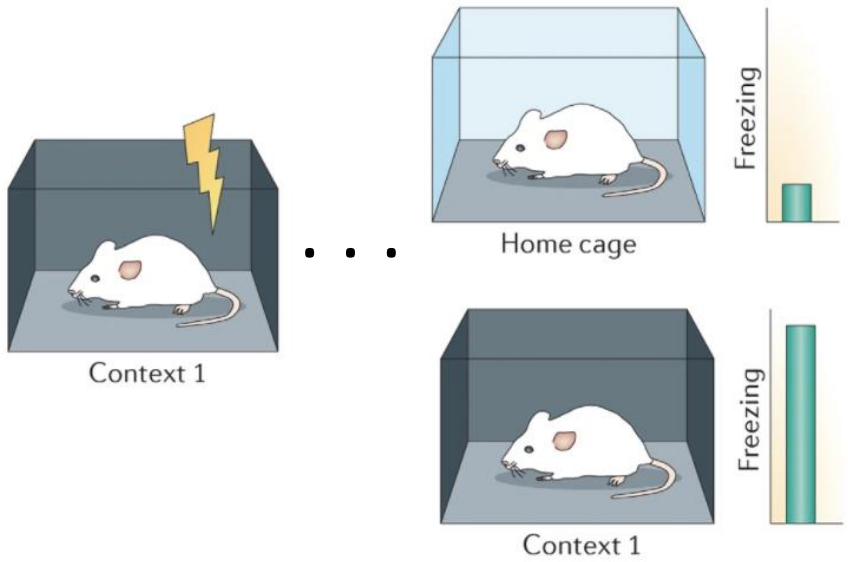
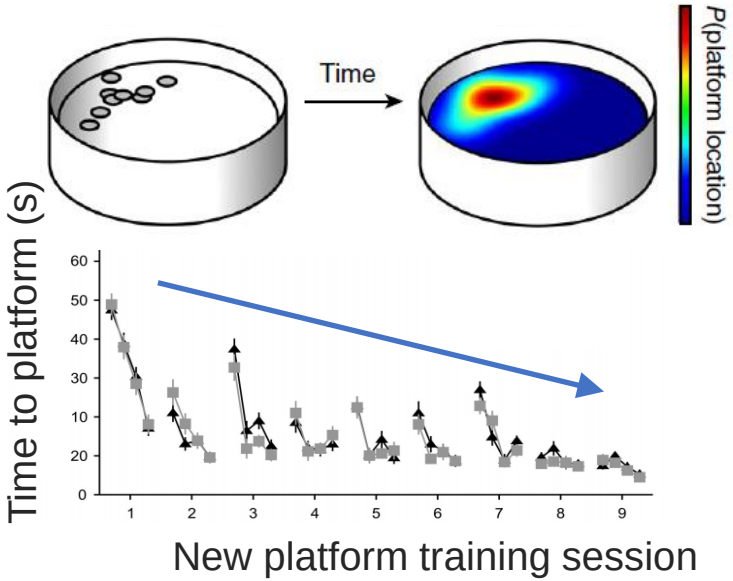
Information can be accumulated over multiple learning experiences

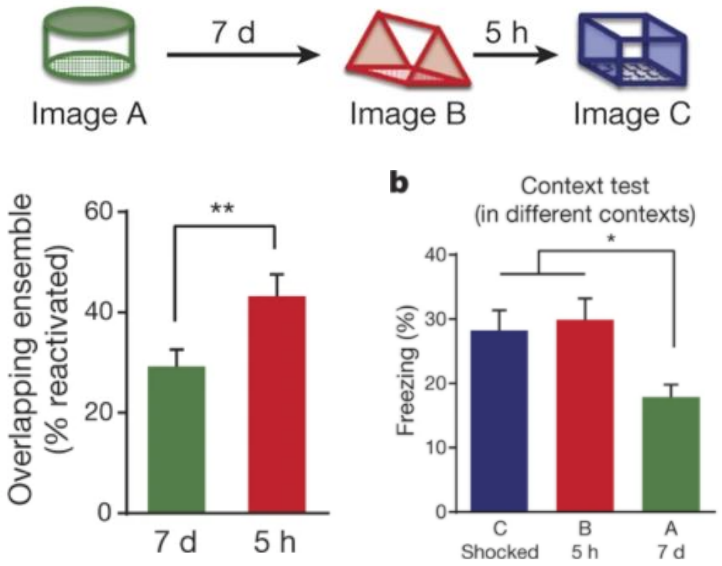


Josselyn, Köhler, & Frankland, 2015



Richards et al., 2014

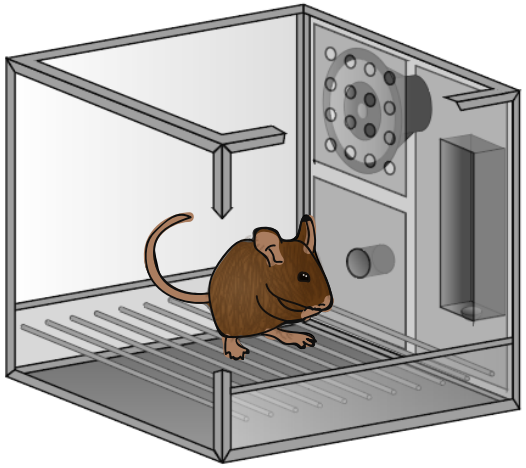
Selectively reactivating HPC ensembles promotes memory integration

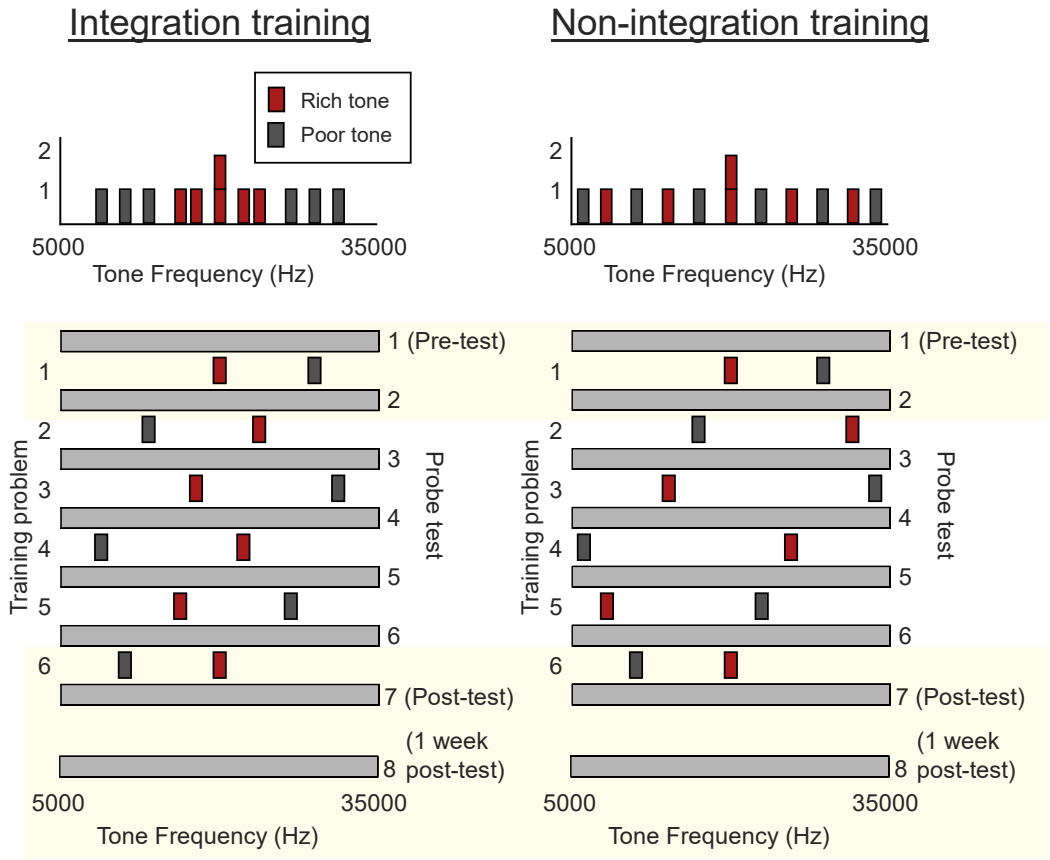


Cai et al., 2016

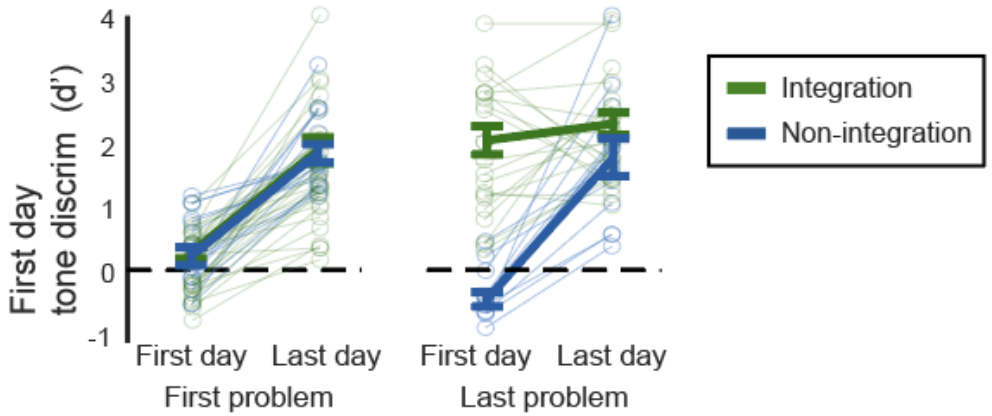
Schlichting & Preston, 2015

Training procedure

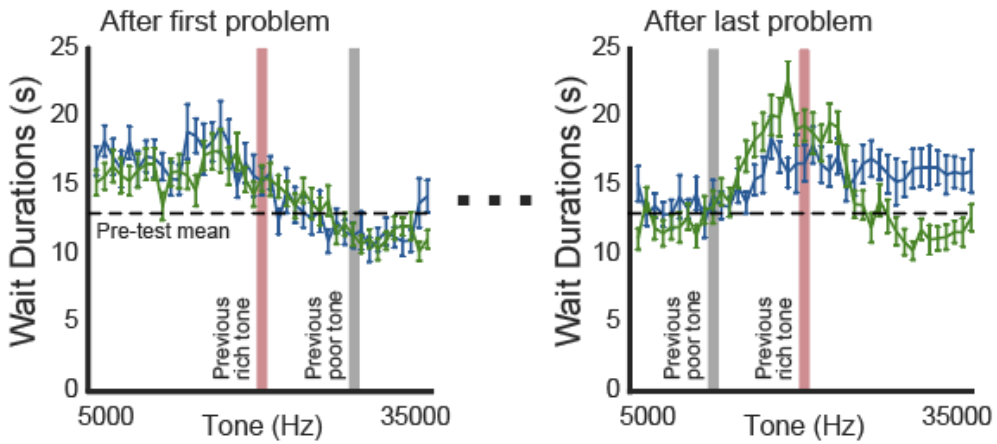




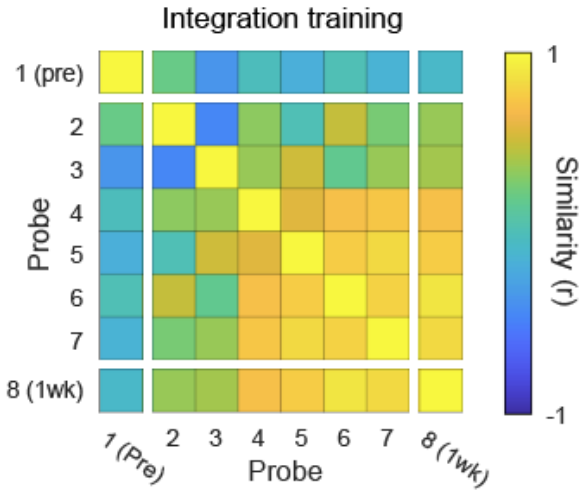
First-day discrimination improves during integration training

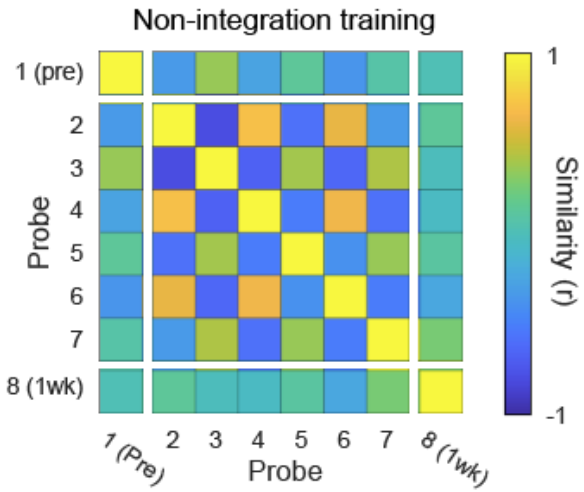


Integrated probe responses reflect accumulated experience

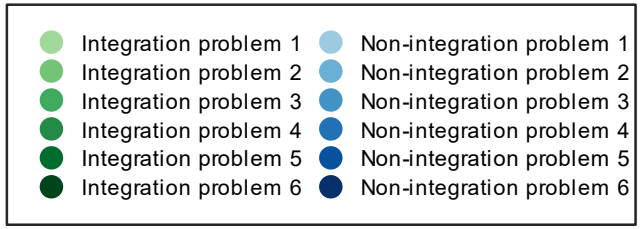


Probe responses converge during integration training

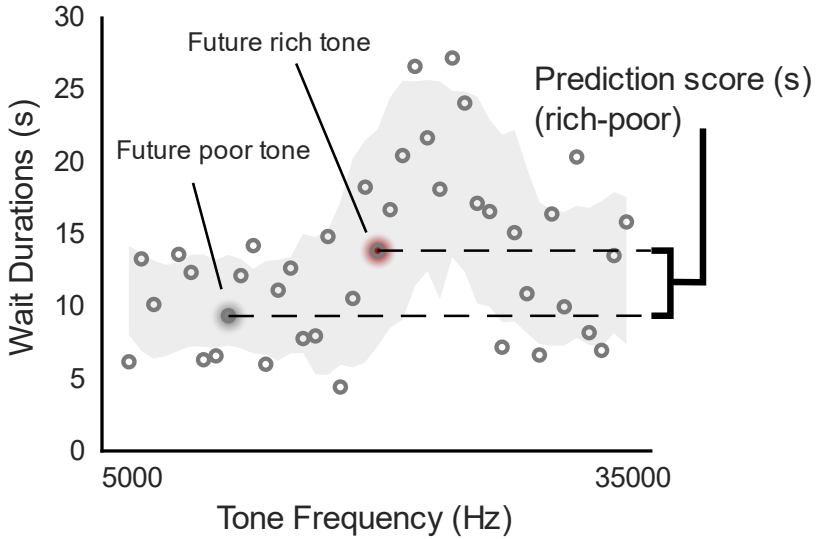




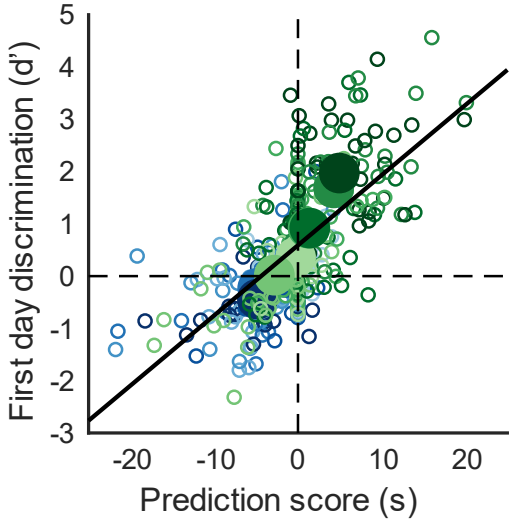
Memory updating



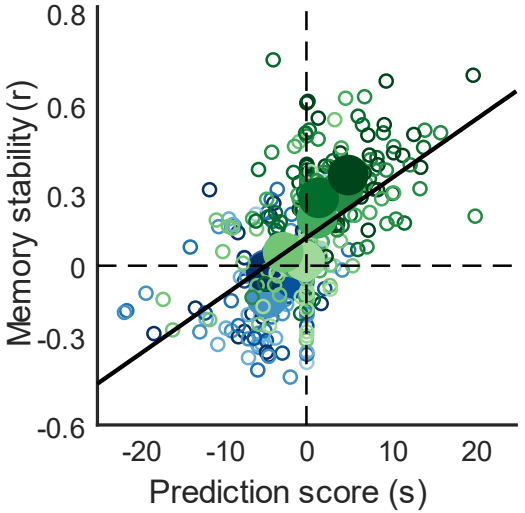
Example probe respose



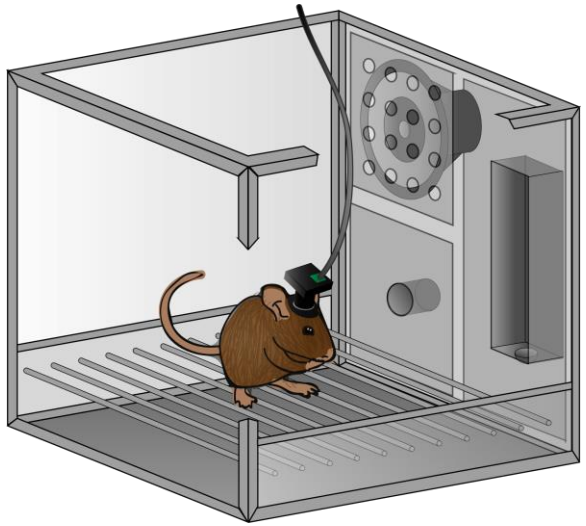
Prediction score predicts discrimination performance



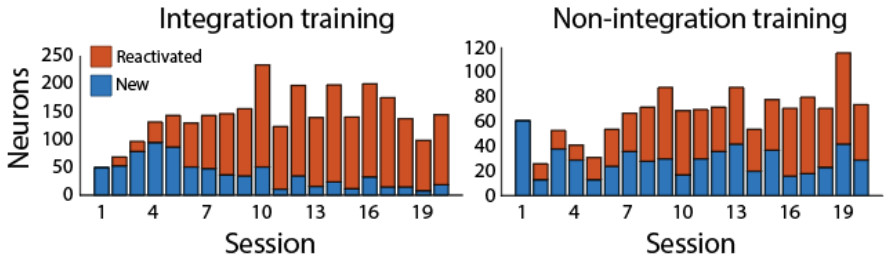
Prediction score predicts memory stability



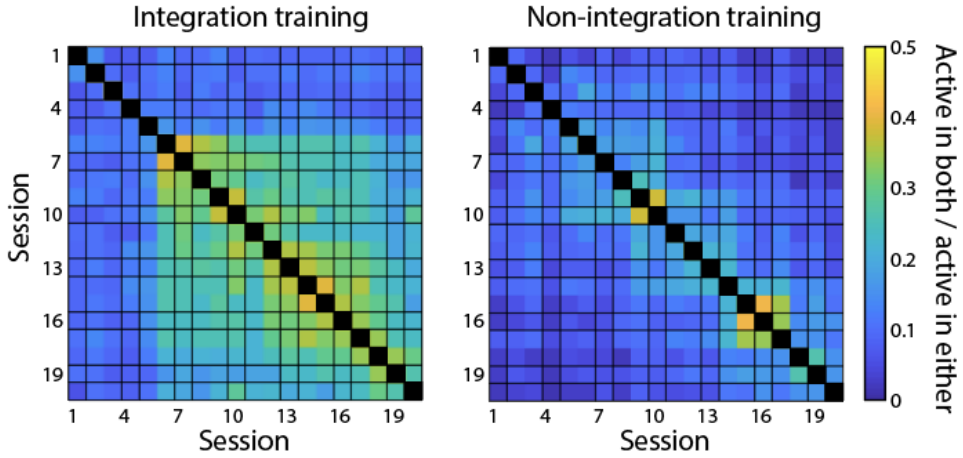
Selective reactivation of CA1 neurons leads to ensemble overlap during integration



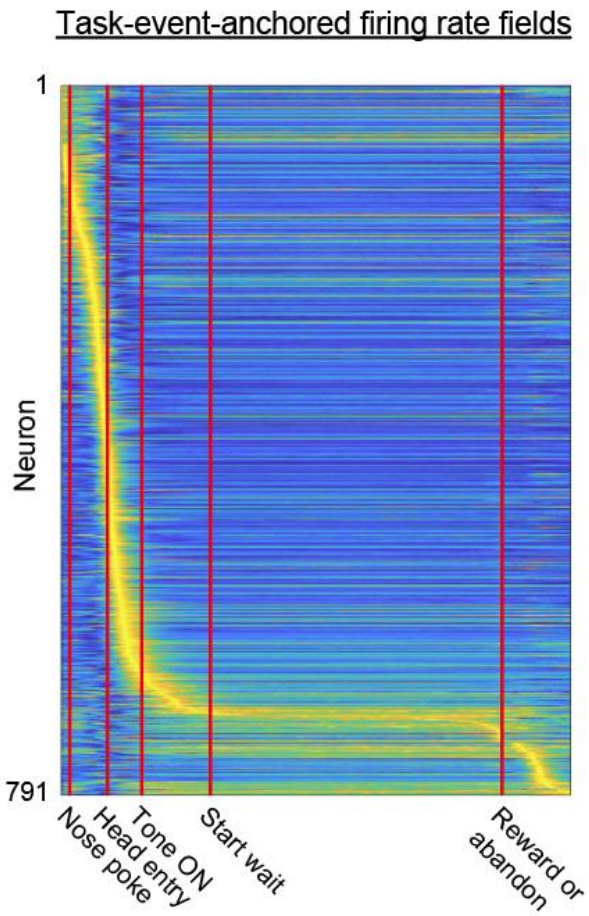
Proportion of reactivated neurons increases during integration training

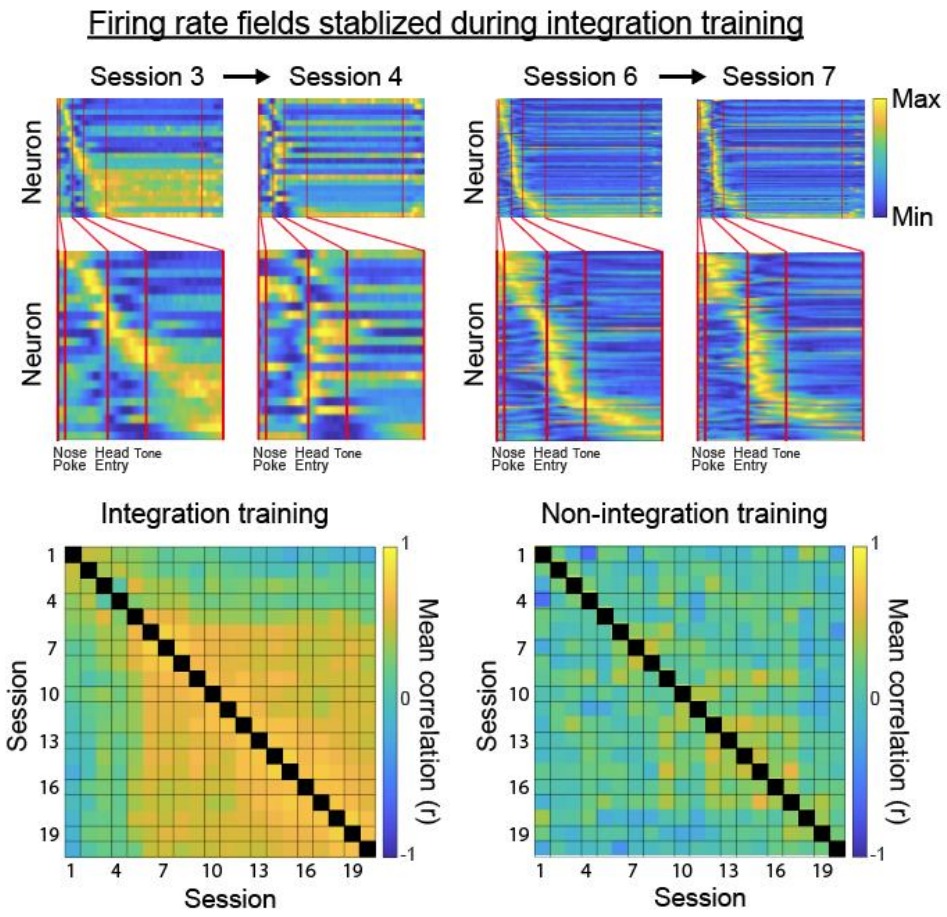


Greater overlap between active populations during integration training

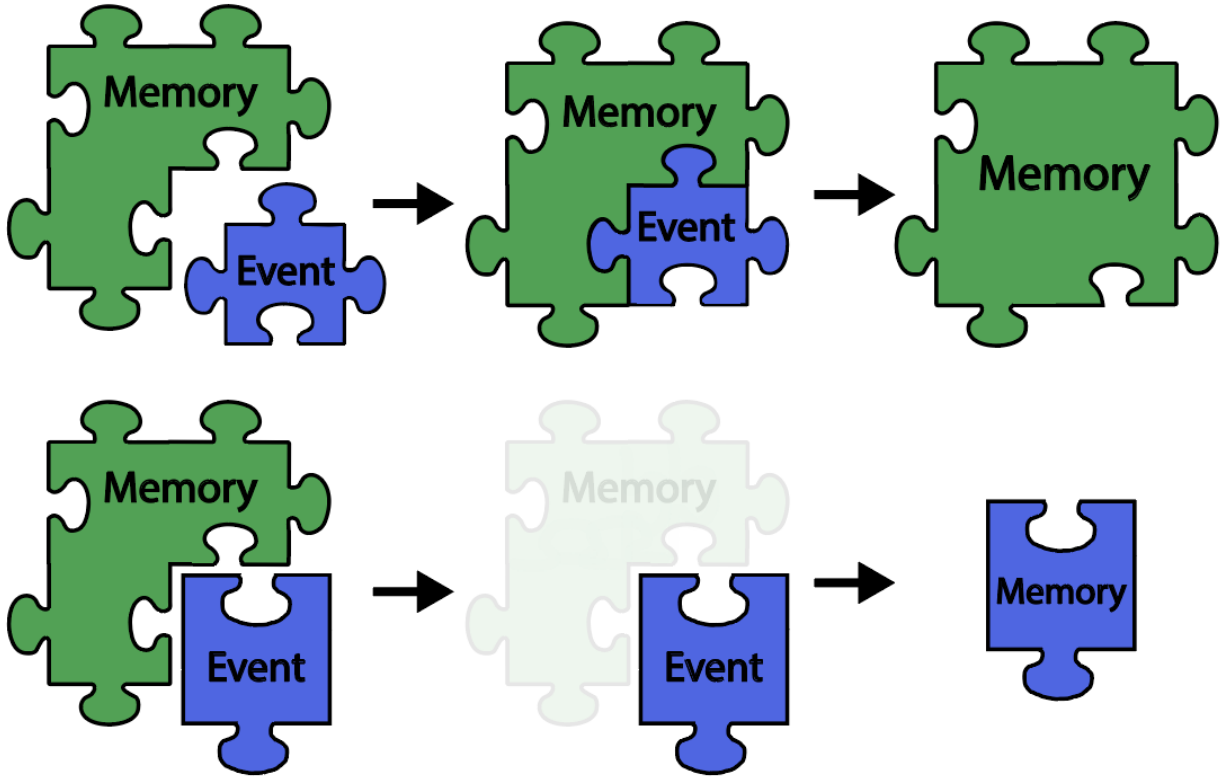


CA1 task responses stabilize during integration training





Related experiences are integrated into retrieved memories



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