

Supporting Information

Chen et al. 10.1073/pnas.1614452114

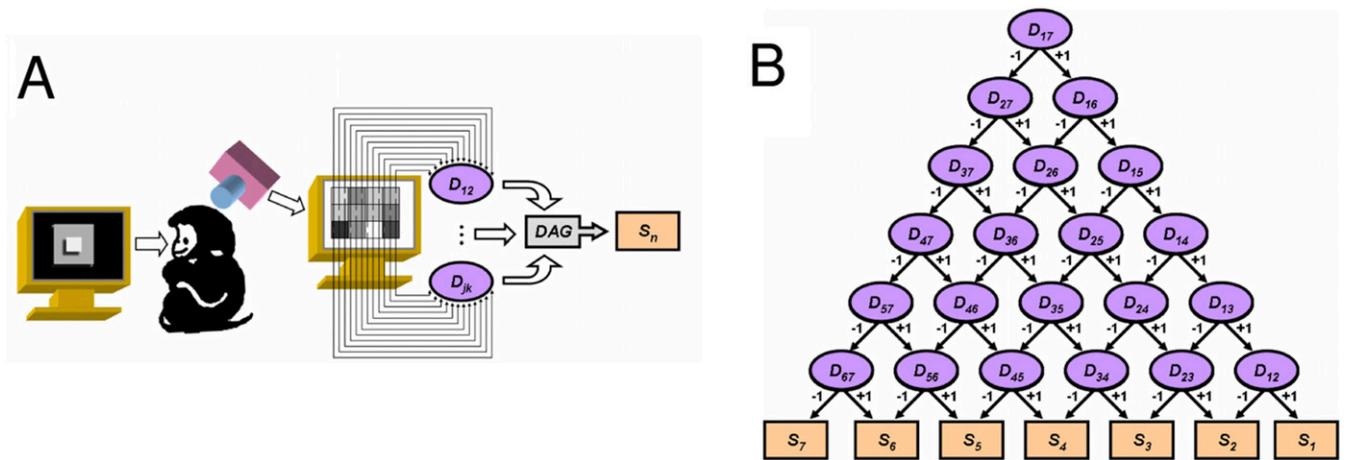


Fig. S1. Pattern classification analysis. (A) In pattern classification analysis, weights of linear detectors D_{12}, \dots, D_{jk} were optimized to predict the stimuli presented. Predictions were made by a DAG method. (B) DAG contains seven leaves to represent the seven disparities we tested (S_1, \dots, S_7) and 21 internal nodes (linear detectors D_{12}, \dots, D_{67}). A series of nodes are activated starting at root node D_{17} . The output of the linear detector (+1 or -1) determines which edge to exit. The value of the predicted disparity is the value associated with the final leaf node.

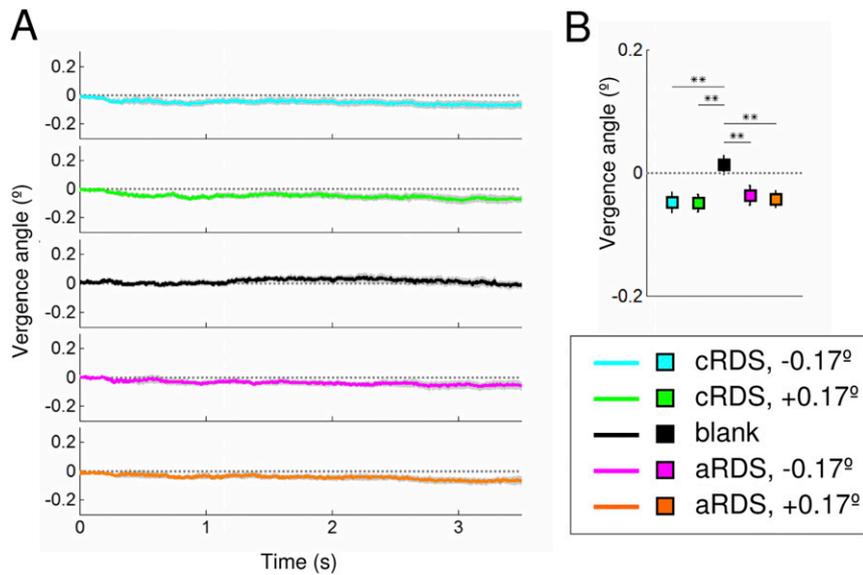


Fig. S2. Vergence status during viewing of RDS stimuli. (A) Stability of eye vergence over the 3.5-s trial period of each stimulus condition. Simple fixation without RDS presentation, black. Colors, see legend. Gray shaded areas, SEM. (B) The average vergence over the 3.5 s of stimulation. Error bars, \pm SEM. $**P < 0.05$.

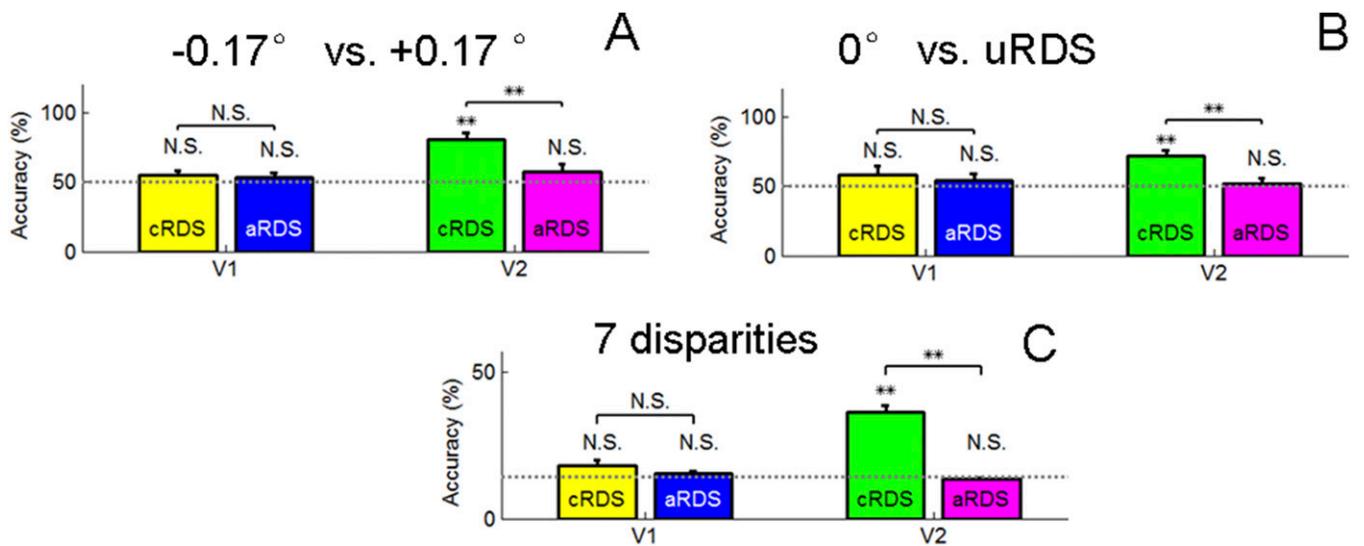


Fig. 55. Pattern classification performance of V1 and V2. (A) V1 performing *NEAR* (-0.17°) vs. *FAR* ($+0.17^\circ$) discrimination of cRDS (yellow bar, $P = 0.30$, $n = 8$ cases) and aRDS (blue, $P = 0.27$, $n = 8$ cases) stimuli; no significant difference between the two categories ($P = 0.63$); and V2 performing *NEAR* (-0.17°) vs. *FAR* ($+0.17^\circ$) discrimination of cRDS (green bar, $P = 0.0005$, $n = 8$ cases) and aRDS (magenta bar, $P = 0.28$, $n = 8$ cases) stimuli; significant difference between two categories ($P = 0.0024$). (B) V1 performing discrimination of uncorrelated RDS vs. cRDS (yellow bar, $P = 0.19$, $n = 8$ cases) and aRDS (blue bar, $P = 0.26$, $n = 8$ cases) zero disparity stimuli; no significant difference between the two categories ($P = 0.58$); and V2 performing discrimination of uncorrelated RDS vs. cRDS (green bar, $P = 0.0005$, $n = 8$ cases) and aRDS (magenta bar, $P = 0.73$, $n = 8$ cases) zero disparity stimuli; significant difference between two categories ($P = 0.01$). (C) V1 performing discrimination of seven cRDS disparity stimuli (yellow bar, $P = 0.09$, $n = 8$ cases) and seven aRDS disparity stimuli (blue bar, $P = 0.21$, $n = 8$ cases); no significant difference between the two categories ($P = 0.36$); and V2 performing discrimination of seven cRDS disparity stimuli (green bar, $P = 4.9 \times 10^{-5}$, $n = 8$ cases) and seven aRDS disparity stimuli (magenta bar, $P = 0.13$, $n = 8$ cases); significant difference between the two categories ($P = 4.9 \times 10^{-5}$). Dotted line, chance level performance (50.0% in A and B and 14.3% in C). Error bars, \pm SEM. N.S., no significance; ** $P < 0.01$.