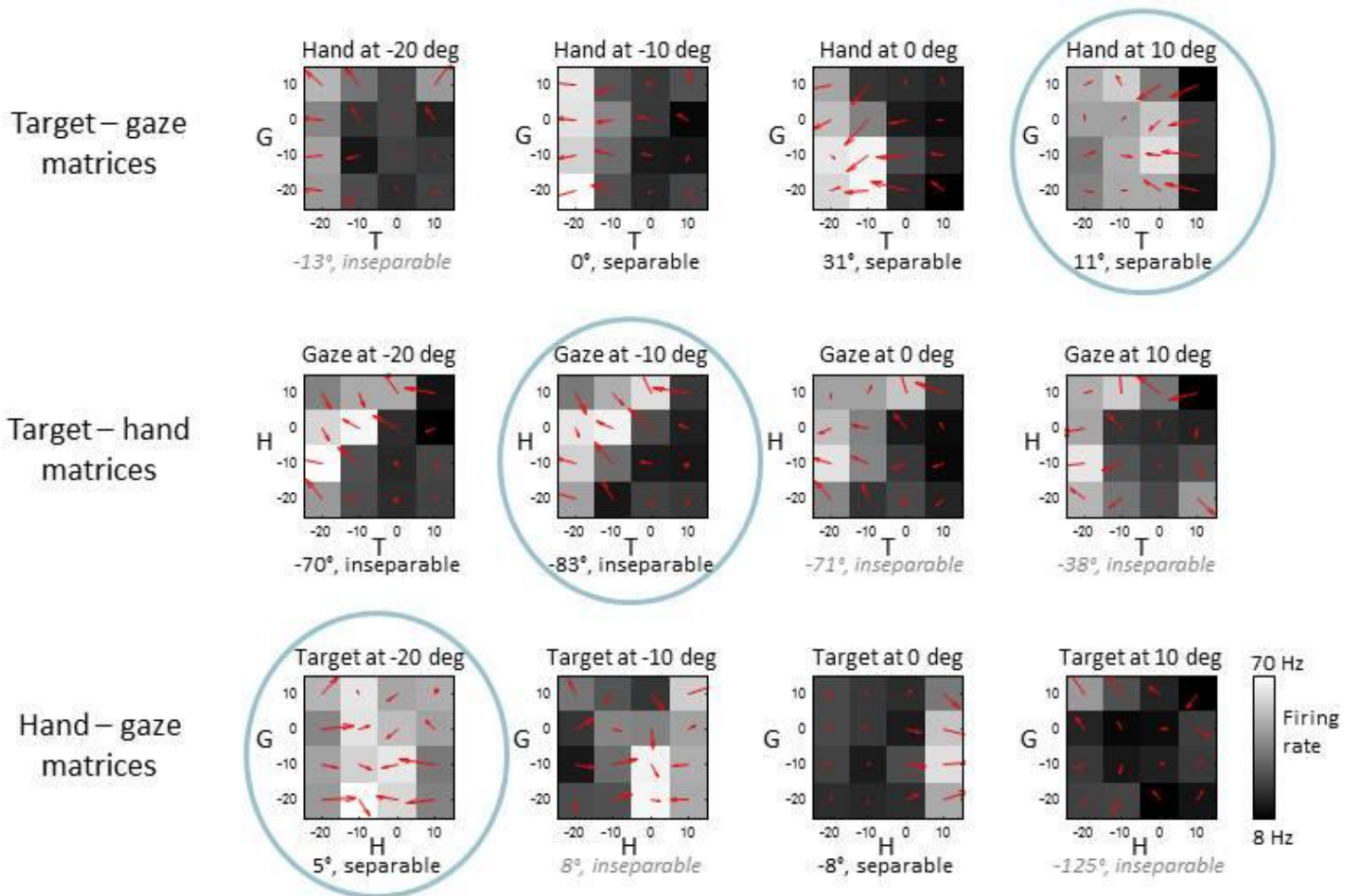
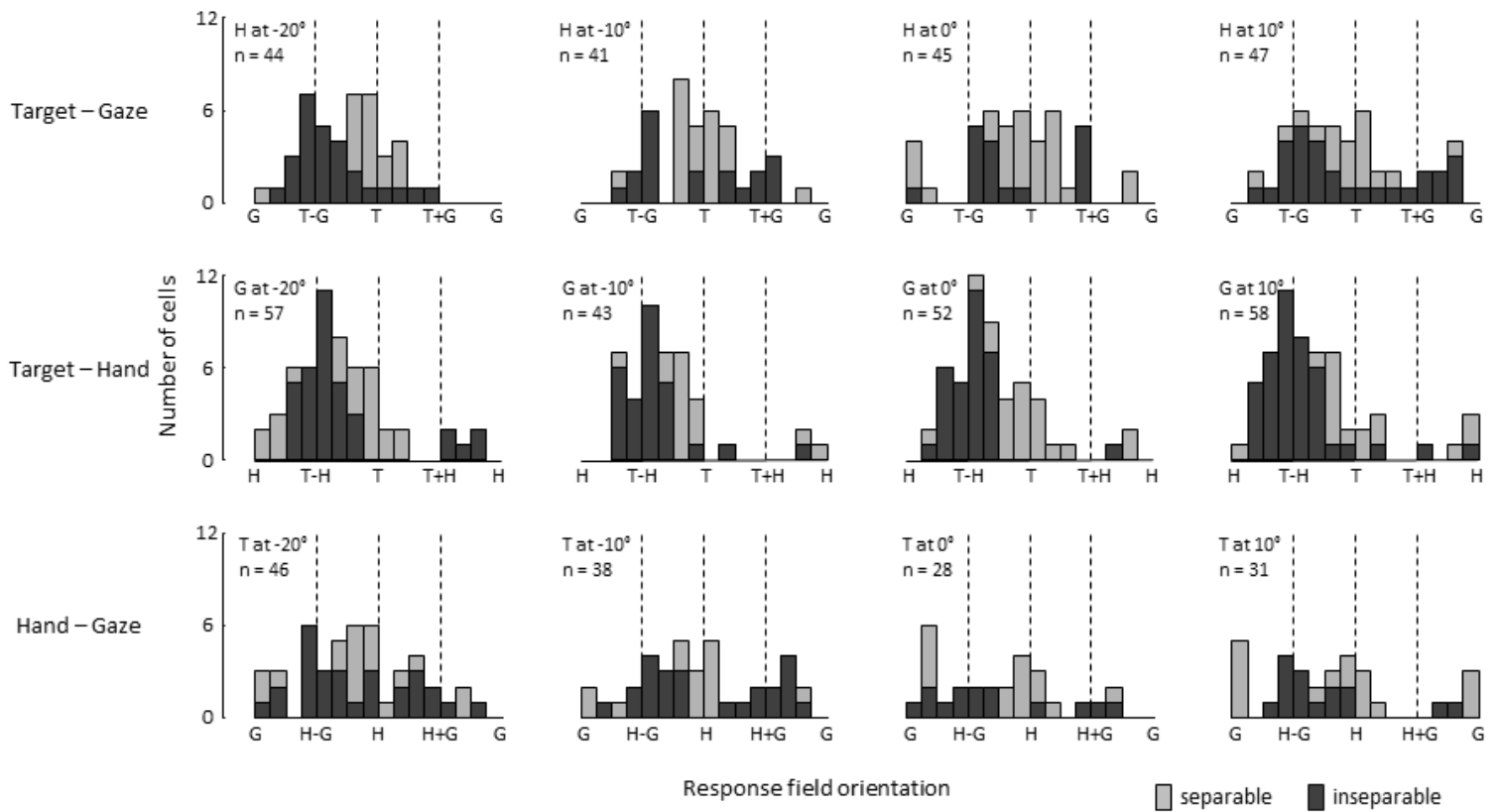


Supplementary Information



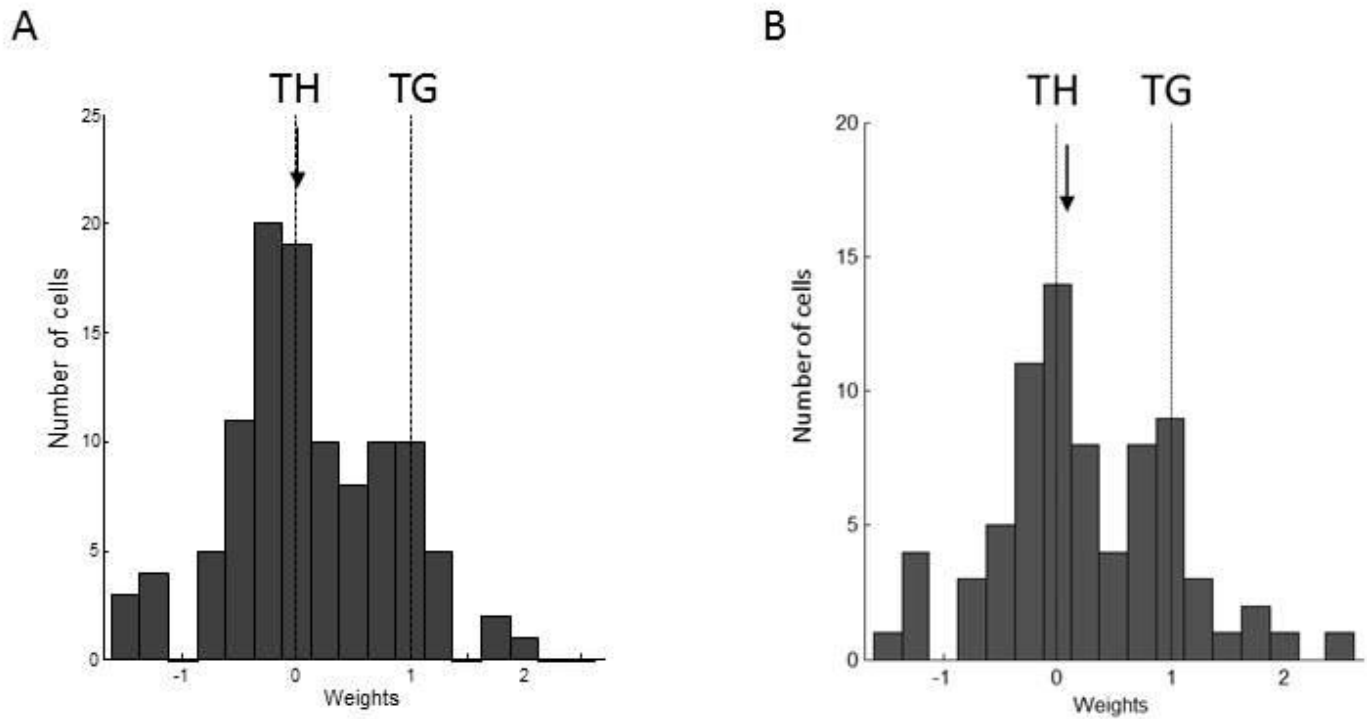
Supplementary Figure S1, related to Figure 3.

The full set of twelve response matrices for the sample cell shown in Figure 3. Elements within a matrix correspond to the mean firing rates for individual trial types during the delay period (ie for single combinations of hand position, gaze position and target location). The text below each matrix gives the direction of the gradient resultant and whether the matrix was separable or not; pale, italicized text indicates that the length of the gradient resultant was not significant and that the response field would be classed as untuned. For each variable pair (TG, TH and HG), the matrix with the highest mean firing rate was selected for inclusion in the main analysis (circled).



Supplementary Figure S2, related to Figure 4.

Target – hand coding is present away from the response field peak. Histograms show the response field orientations for the population of tuned cells for each pair of variables (top row: target – gaze; middle row: target – hand; bottom row: hand – gaze) while the third variable is held constant at one of four positions (columns from left to right: -20 deg, -10 deg, 0 deg, 10 deg). Stacked bars represent inseparable (dark grey) or separable (light grey) responses.



Supplementary Figure S3, related to Figure 6.

Distribution of weights in the parametric modeling analysis for (A) cells with the response peak in the working range (n=108) and (B) cells with $r^2 \geq 0.6$ (n=75). The arrowheads indicate the median weight values of 0.01 and 0.11, respectively.