Dissociating sensory from decision processes in human perceptual decision making

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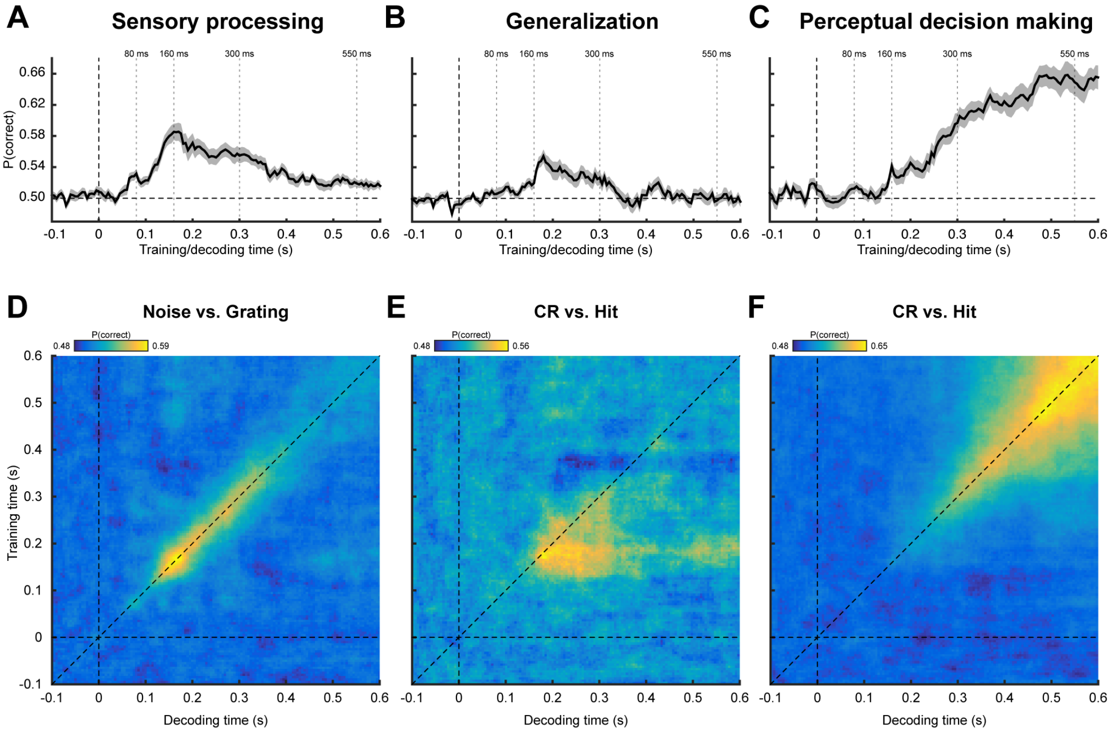
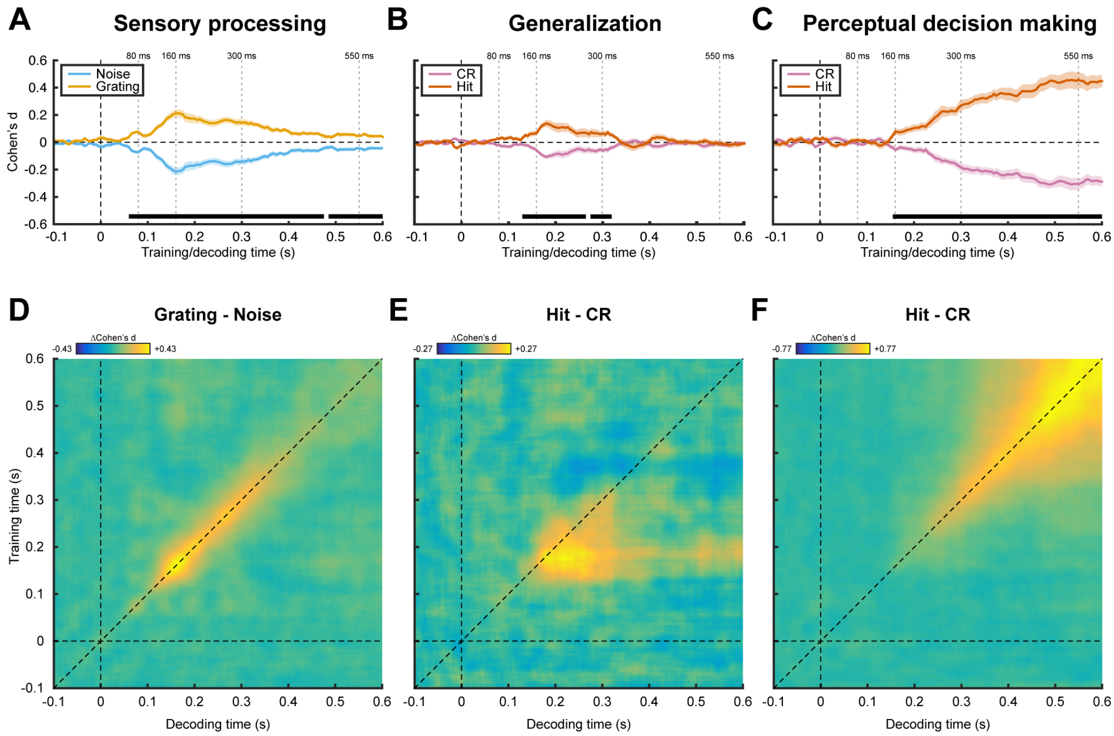
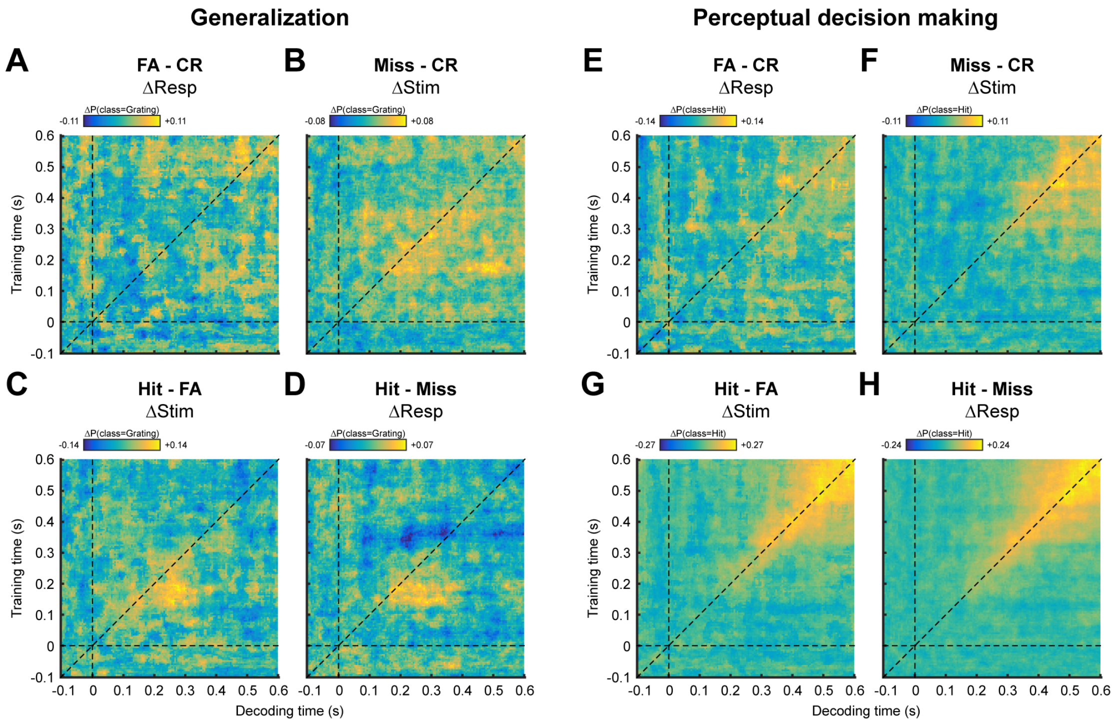
Supplementary Information



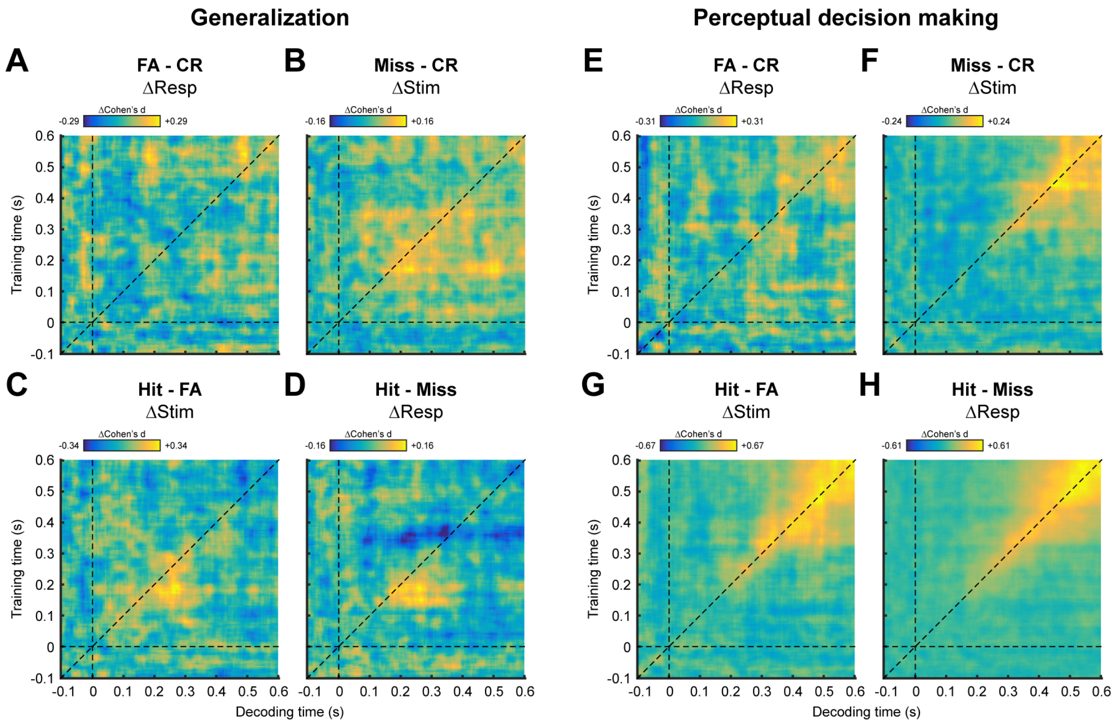
Supplementary Figure S1. The same results as presented in Figure 2A-F, but instead expressed as classification accuracy. For the between-task generalization, hits and CRs were considered correct when classified as gratings and noise, respectively. No statistical tests were conducted on these results.



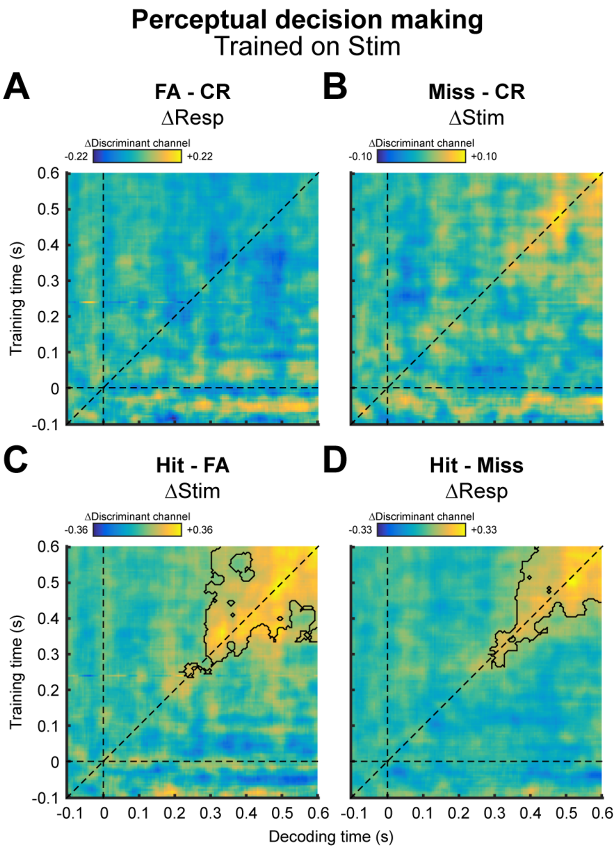
Supplementary Figure S2. The same results as presented in Figure 2A-F, but instead expressed as Cohen's d. No statistical tests were conducted on these results.



Supplementary Figure S3. The same results as presented in Figure 4, but instead expressed as the proportion of trials within each of the four stimulus/response-categories that were classified as grating (***A-D***) or as hit (***E-H***). No statistical tests were conducted on these results.



Supplementary Figure S4. The same results as presented in Figure 4, but instead expressed as Cohen's d. No statistical tests were conducted on these results.



Supplementary Figure S5. The results of an analysis akin to Figure 4, but instead the decoders were trained to discriminate between grating present versus absent, irrespective of the subject's decision (as opposed to training on CRs versus hits). However, as the numbers of trials are unequal across the four categories, the stimulus presence is correlated to decision. To counter this, we trained on the unweighted average of CRs and FAs (i.e. stimulus absent) versus the unweighted average of misses and hits (i.e. stimulus present). Specifically, in Eq. 5 (see *Methods*), this corresponds to $\hat{\mu}_1 = \frac{1}{2}(\hat{\mu}_{CR} + \hat{\mu}_{FA})$ and $\hat{\mu}_2 = \frac{1}{2}(\hat{\mu}_{Miss} + \hat{\mu}_{Hit})$. Similarly, the common covariance matrix was calculated as the unweighted average of the four individual covarance matrices within each category.