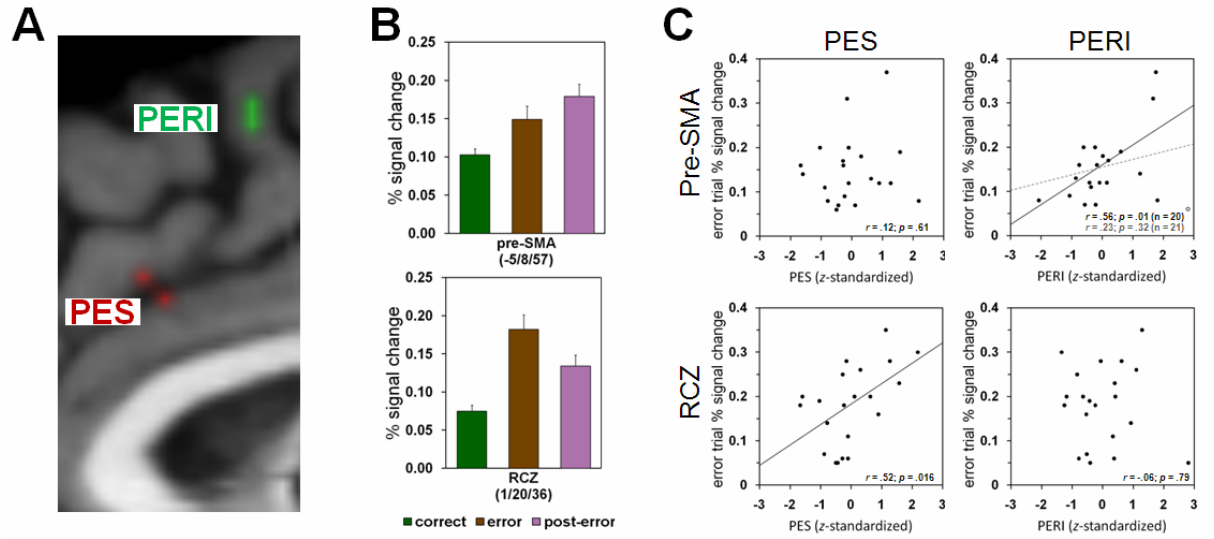
SUPPLEMENTAL FIGURES

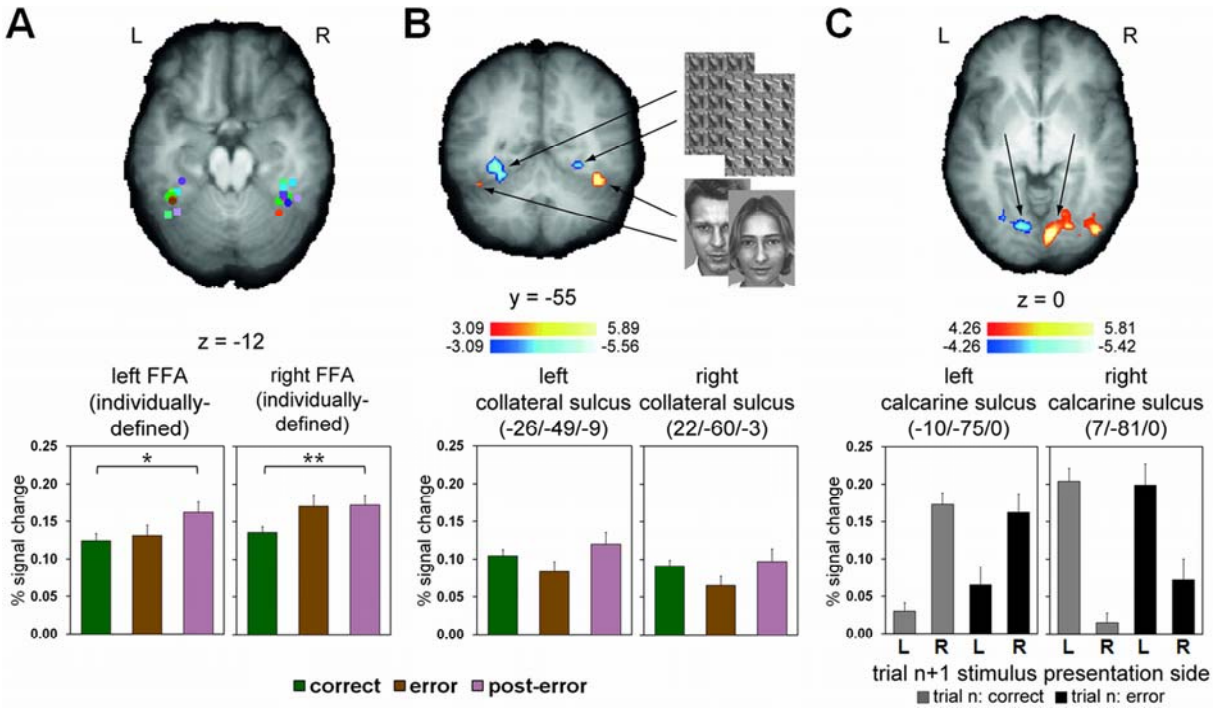
Supplemental Figure S1



Supplemental Figure S1 PEBA-dependent error-related pMFC activation. (**A**) PEBA-informed analyses of *error* > *correct* hemodynamic activity in the empirically-defined error-sensitive pMFC (cf. Fig. 3) revealed subthreshold positive correlations with 1) PES in the rostral cingulate zone (RCZ; red; x = 1/y = 20/z = 36; 270 mm^3; Z_{mean} = 2.47; p < .01; uncorrected) and with 2) PERI in the pre-supplementary motor area (pre-SMA; green; x = -5/y = 8/z = 57, 108 mm^3, Z_{mean} = 2.45; p < .01; uncorrected). Data are plotted on a sagittal slice (x = -2) of a T1-weighted MR image of an individual brain in Talairach space. Although these relationships were of comparable spatial extent and activation intensity, only the correlation evident in the RCZ survived correction for multiple comparisons at each voxel within the pMFC search volume (11,313 mm^3; small volume correction; p < .05), while that in the pre-SMA did not. Thus, given the elevated likelihood that this pattern of results may have been observed by chance, we conducted further validation analyses. First, we calculated the accuracy-dependent percentage BOLD signal change in each of the identified ROIs. (**B**) Bar graphs show the group mean BOLD percentage signal change on correct, error and post-error trials (± s.e.m) measured in the identified RCZ and pre-SMA regions. Next, we conducted correlation analyses between the error-related BOLD percentage signal change data and the individual PEBA values. (**C**) Scatterplots show correlations between error trial BOLD activity in the RCZ and pre-SMA with the individual PES and PERI scores. Each point corresponds to the

averaged data from one participant. Supporting the suggested relationship between error-related RCZ activity and PES [see again, (**A**); red], error trial signal change recorded in this region correlated positively with PES (bottom, left), but was unrelated to PERI (bottom, right). However, providing only partial support for the suggested relationship between error-related pre-SMA activity and PERI [see again, (**A**); green], error trial signal change recorded in this region correlated with PERI only under exclusion of the participant who had an outlier PERI score (top, right; see also, Materials and Methods). Nonetheless, error-related pre-SMA activity was not related to PES (top, left).

Supplemental Figure S2



Supplemental Figure S2 Control analyses in visual cortex. (**A**) Center of mass locations of the individual participant FFAs as evident in the localizer task data (Materials and Methods) are plotted in different colors on a T1-weighted axial slice of the sample mean brain. To test whether increased post-error FFA activation (Results, Fig. 5*B*) were qualified by bottom-up effects driven by stimulus location (Hemond et al., 2007), we submitted the BOLD signal change data measured in the individually-defined ROIs to 2 (trial n-1 accuracy) X 2 (stimulus presentation side) ANOVAs.

Activation was generally elevated in both hemispheres for stimuli in the contralateral visual field (both $F_{1,20} > 5.8$; both $p < .05$), but post-error vs. correct differences were not affected (shown here averaged for stimulus presentation side in relation to error trial activity; ± s.e.m; left FFA: $F_{1,20} = 5.8$; $p = .03$; right FFA: $F_{1,20} = 9.5$; $p = .006$) and no interactions were present (both $F_{1,20} < 1.3$; both $p > .3$). * $p < .05$, ** $p < .01$. L, left; R, right. (**B,C**) To test whether enhanced post-error sensory processing was a generic effect in visual cortex, we conducted analog analyses of the BOLD signal change measured in bilateral regions of (**B**) extrastriate cortex which showed *scrambled* > *face* sensitivity in the localizer task data and (**C**) location-sensitive regions of early visual cortex identified by random effects contrasts of the Simon task data on all trials sorted according to stimulus presentation side. (**B**) Group average *scrambled* (cool colors) > *face* (warm colors) activation in the bilateral collateral sulcus evident in the FFA localizer task data is shown at $p < .001$ (uncorrected) on a coronal slice of the group mean brain with sample scrambled-face and face stimuli. Simon task signal change data measured in the scrambled-sensitive regions are presented as in (**A**). As in the FFA, both of these extrastriate regions showed a general preference for stimuli presented in the contralateral visual field (both $F_{1,20} > 17.5$; both $p < .001$), but activation on post-error vs. correct trials did not generally differ (both $F_{1,20} < 1.1$; both $p > .3$) and no interactions were significant (both $F_{1,20} < 1.2$; both $p > .3$). We also conducted 2 (trial n-1 accuracy) X 2 (trial n compatibility) ANOVAs in these regions (i.e. as conducted for the FFA in the main article). Marginally elevated post-error activation was evident in the left scrambled-sensitive region ($F_{1,20} = 3.3$; $p = .08$) and a trend for an interaction emerged ($F_{1,20} = 3.8$; $p = .07$), but no effects approached significance in the right scrambled-sensitive region (all $F_{1,20} < 1.7$; all $p > .2$). (**C**) Regions of the bilateral calcarine sulcus in early visual cortex which showed the strongest preference for stimuli in the right > left (cool colors) and left > right (warm colors) visual field during performance of the Simon task are shown at $p < .00001$ (uncorrected) on an axial slice of the group mean brain. At this alpha level, no other regions showed sensitivity to stimulus presentation side. As illustrated in the signal change data, post-error vs. correct trial activation did not generally differ in either hemisphere (both $F_{1,20} < 1.8$; both $p > .2$), but the stimulus-driven preference for stimuli presented in the contralateral visual field ($F_{1,20} > 35.5$; both $p < .0001$) was significantly reduced on post-error trials (i.e. trial n-1 accuracy X trial n stimulus presentation side interactions) in both the left ($F_{1,20} = 5.1$; $p = .04$) and right hemisphere ($F_{1,20} = 4.8$; $p = .04$).

Additional 2 (trial n-1 accuracy) X 2 (trial n compatibility) ANOVAs of the signal change data revealed marginally elevated post-error activation in the right calcarine sulcus ($F_{1,20}$ = 3.4; p = .08), but differences were not evident in the left hemisphere ($F_{1,20}$ = 2.2; p > .16) and no interactions were present (both $F_{1,20}$ < 2.0; both p > .17).