iScience, Volume *25*

Supplemental information

Seeing a Bayesian ghost: Sensorimotor activation leads to an illusory social perception

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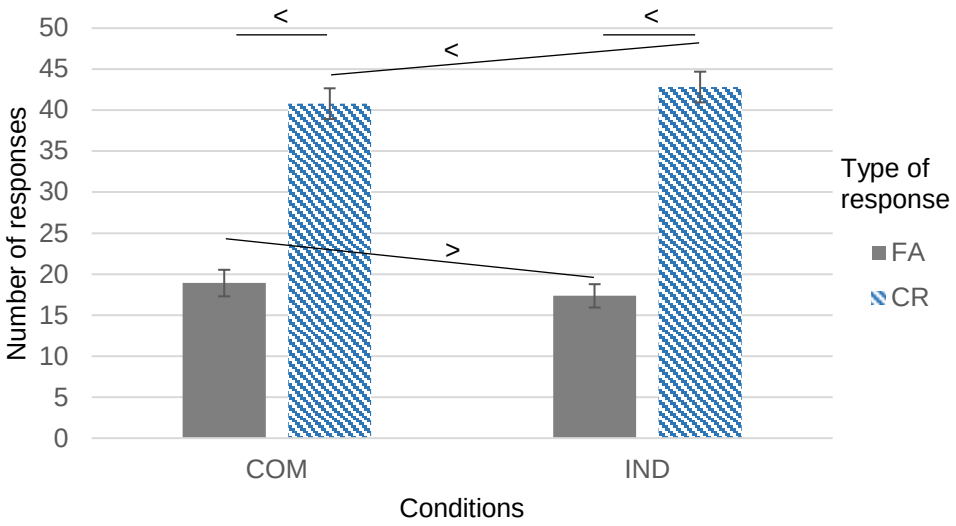

Figure S1. *Illustration of the analysis of number of responses*, related to Figure 1 and behavioral results.
The mean and standard error of the mean are displayed for the number of responses with the variables 'type of response' (i.e., false alarm (FA) or correct rejection (CR) trials) and 'condition' (i.e., communicative (COM) or individual (IND)). The results from a 2x2 two-tailed repeated-measures ANOVA indicated that the main effect of 'condition' was not significant, whereas the main effect of 'type of response' was ($p < 0.05$). Participants had fewer false alarms than correct rejections (indicated with "<"). The interaction of 'condition' and 'type of response' was also significant. More false alarms were made in the communicative than in the individual condition (indicated with ">"). Fewer correct rejections were made in the communicative than in the individual condition (indicated with "<").

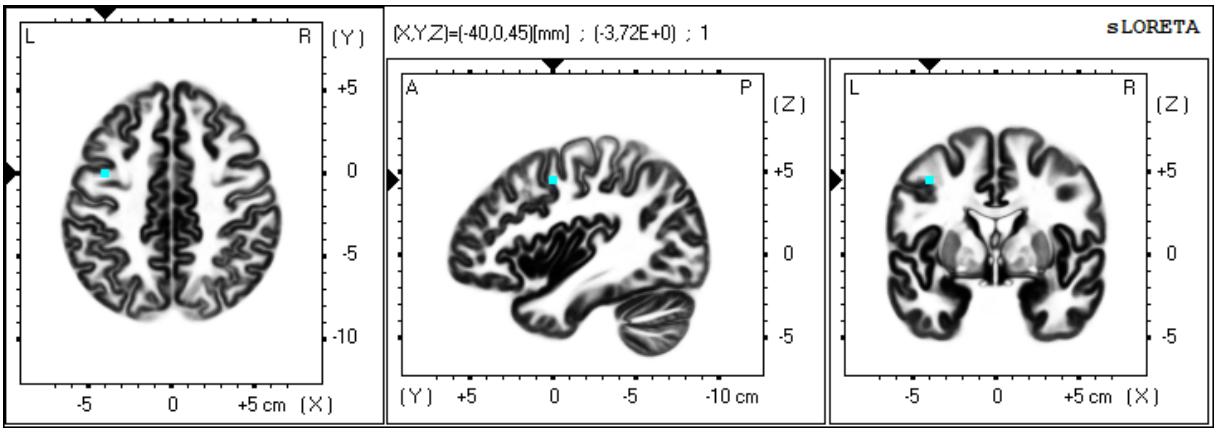

Figure S2. *Different brain views for the significant effect in the main contrast false alarm versus correct rejection trials in the communicative condition in time segment (1) in the alpha frequency band*, related to Figure 2A and neural correlates.
In the time segment (1) before agent B's onset, a power decrease in false alarm - compared to correct rejection trials - was found in the alpha frequency band (8-12 Hz) in the left frontal lobe, Brodmann Area 6, premotor cortex (peak significance at MNI coordinates: -40/0/45; $p < 0.05$).

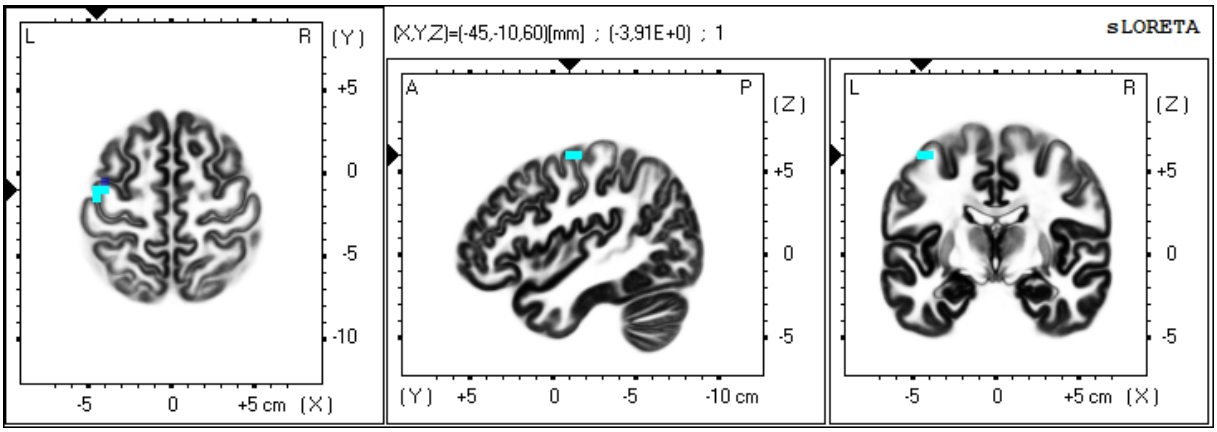

Figure S3. *Different brain views for the significant effect in the main contrast false alarm versus correct rejection trials in the communicative condition in time segment (1) in the lower beta frequency band*, related to Figure 2B and neural correlates.
In the time segment (1) before agent B's onset, a power decrease in false alarm - compared to correct rejection trials - was found in the lower beta band (13-17 Hz) in the left frontal lobe, Brodmann Area 6, premotor cortex (peak significance at MNI coordinates: -45/-10/60; $p < 0.05$) with significant activation spreading to voxels in the adjacent primary motor cortex, Brodmann Area 4.

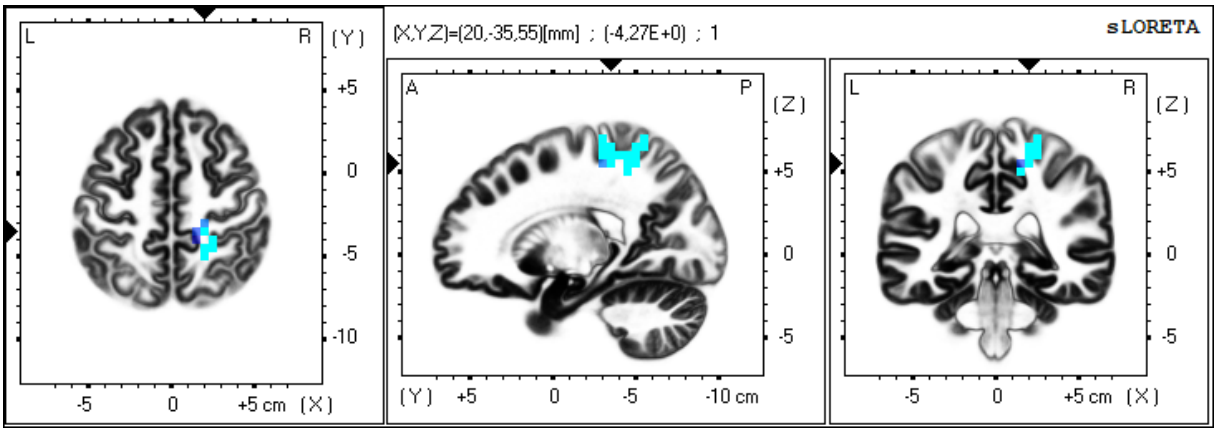

Figure S4. *Different brain views for the significant effect in the main contrast false alarm versus correct rejection trials in the communicative condition in time segment (3) in the upper beta frequency band*, related to Figure 2C and neural correlates.
In the time segment (3) before the response, a power decrease in false alarm - compared to correct rejection trials - reached significance in the upper beta band (18-25 Hz) in the right postcentral gyrus, Brodmann Area 3, primary somatosensory cortex (peak significance at MNI coordinates: 20/-35/55; $p < 0.05$). Significant voxels were also present in the Brodmann Area 2 of the primary somatosensory cortex. Additionally, the significant difference spread to the adjacent right precentral gyrus, Brodmann Area 4, primary motor cortex as well as to the other following right parietal regions: Brodmann Area 5 (paracentral gyrus, postcentral gyrus), Brodmann Area 7 (postcentral gyrus, superior parietal lobule, precuneus) and Brodmann Area 40 ($p < 0.05$).

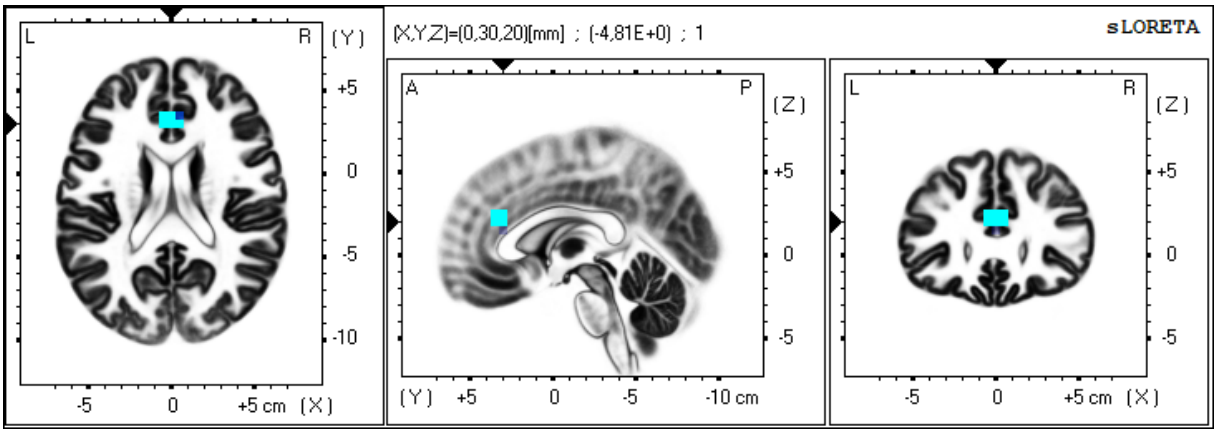

Figure S5. *Significant brain region for the control contrast false alarm versus correct rejection trials in the individual condition*, related to Figure 2 and neural correlates.
In the time segment (1) before agent B's onset, lower power was found in the upper beta band in the bilateral anterior cingulate cortex in Brodmann Area 24, limbic lobe (peak significance at MNI coordinates: 0/30/20; $p < 0.05$) in false alarm than correct rejection trials. Significant voxels also spread to the anterior cingulate cortex in Brodmann Area 32.

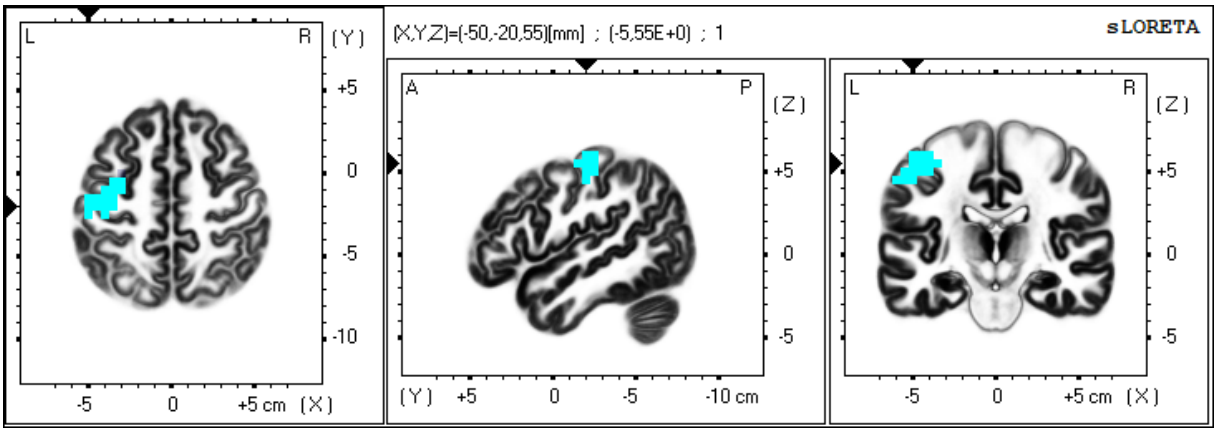

Figure S6. *Significant brain region for the control contrast false alarm versus hit trials in the communicative condition in time segment (1),* related to Figure 2 and neural correlates.
In the time segment (1) before agent B's onset, a power decrease in false alarm - compared to hit trials - reached significance in the lower beta band in the left postcentral gyrus, Brodmann Area 3, primary somatosensory cortex (peak significance at MNI coordinates: -50/-20/55; $p < 0.05$). Significant voxels were also present in the Brodmann Area 1 and 2 of the primary somatosensory cortex. Additionally, the significant difference spread to the adjacent left precentral gyrus, Brodmann Area 4, primary motor cortex and Brodmann Area 6, premotor cortex ($p < 0.05$).

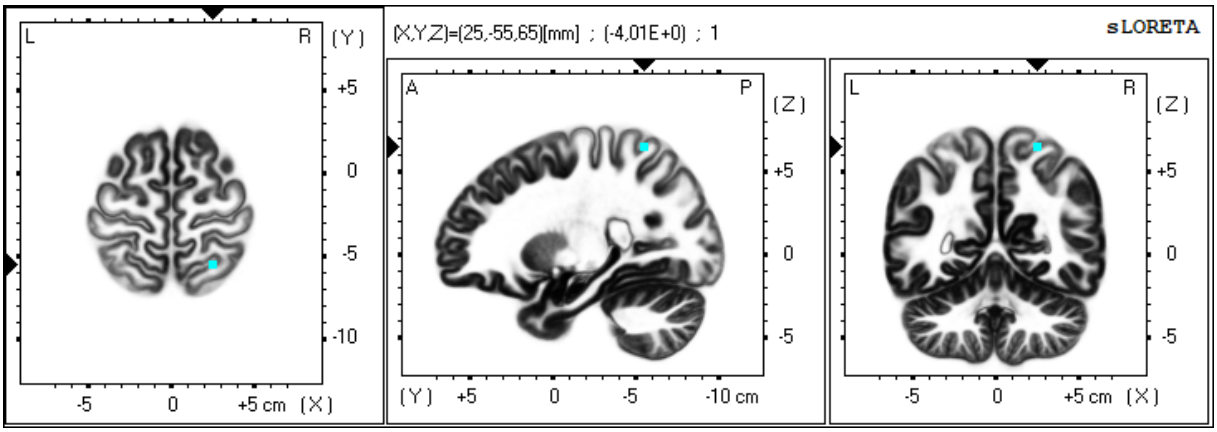

Figure S7. *Significant brain region for the control contrast false alarm versus hit trials in the communicative condition in time segment (3)*, related to Figure 2 and neural correlates.
In the time segment (3) before the response, lower power was found in the upper beta band in the right superior parietal lobule, Brodmann Area 7, parietal lobe (peak significance at MNI coordinates: 25/-55/65; $p < 0.05$) in false alarm than hit trials.