

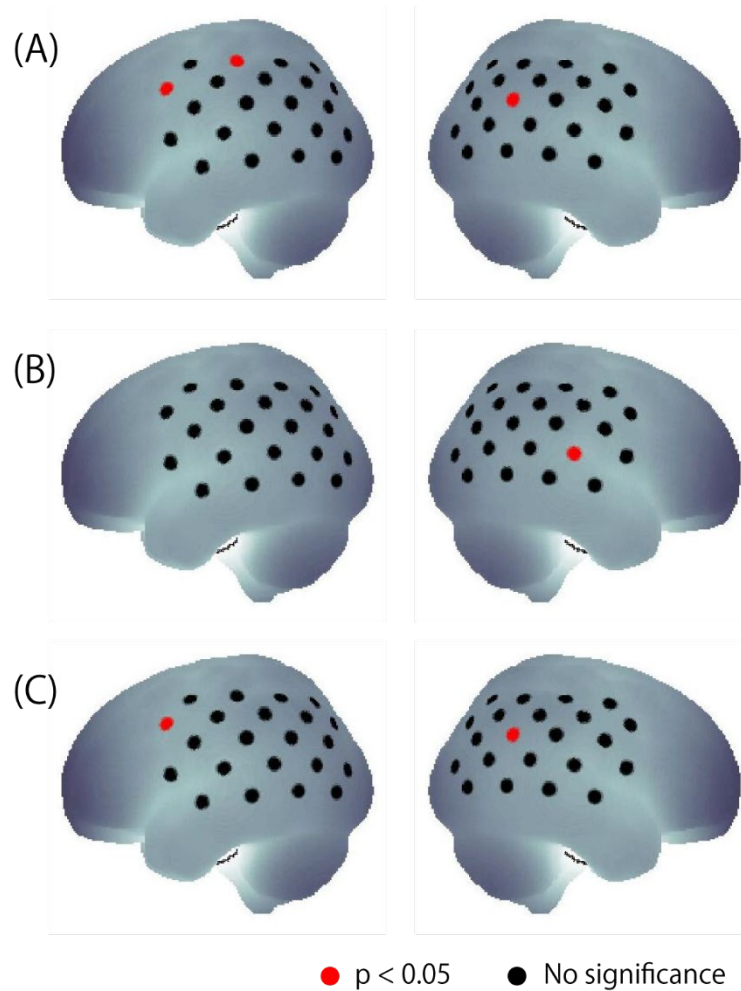
## **Supplementary Material**

### **Synchronization of brain activity associated with eye contact: Comparison of face-to-face and online communication**

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We applied a simple statistical analysis used in a previous study [1] to check the basic pattern of activation during the eye contact task. First, the time-continuous data of the oxy-Hb signals for each channel were separated into task blocks, which were defined as 30-s periods starting from 1.0 s before the “Task” onset and ending 14.0 s after the “Task” phase. The separated data were baseline-corrected for the mean value of the first second of each block. To evaluate activation during the eye contact task, we defined the “activation period” as a 15-s period starting 5.0 s after “Task” onset, taking into consideration the delay in hemodynamic changes from neuronal activity. The mean signal changes during the activation period were calculated for each task block. Then, the mean value of the mean signal changes across task blocks was defined as an activation value for each channel and each participant.

To check the simple activation pattern, the activation values were evaluated by using the one-sample t-test each for the face-to-face condition (FC) and online condition (OC), which explored channels with a significant difference from zero ( $p < 0.05$ , uncorrected). Consequently, we found three channels in the FC and one channel in the OC, which showed significantly higher positive values in the “Task” (Fig. S1\_A and S1\_B). In addition, the two-sample t-test comparing the FC and OC identified one channel in the left and one channel in the right hemisphere showing significant differences ( $FC > OC$ ; Fig. S1\_C).



**Fig. S1.** Activation maps for the eye contact task (a) Activation map for the FC (b) Activation map for the OC (c) Difference between the FC and OC

### Reference

1. Aoki, R. et al. Relationship of negative mood with prefrontal cortex activity during working memory tasks: an optical topography study. *Neurosci. Res.* **70**, 189-196 (2011).