Trial #159 — Recognition Potential Analysis

NO CONNECTED ELECTRODES

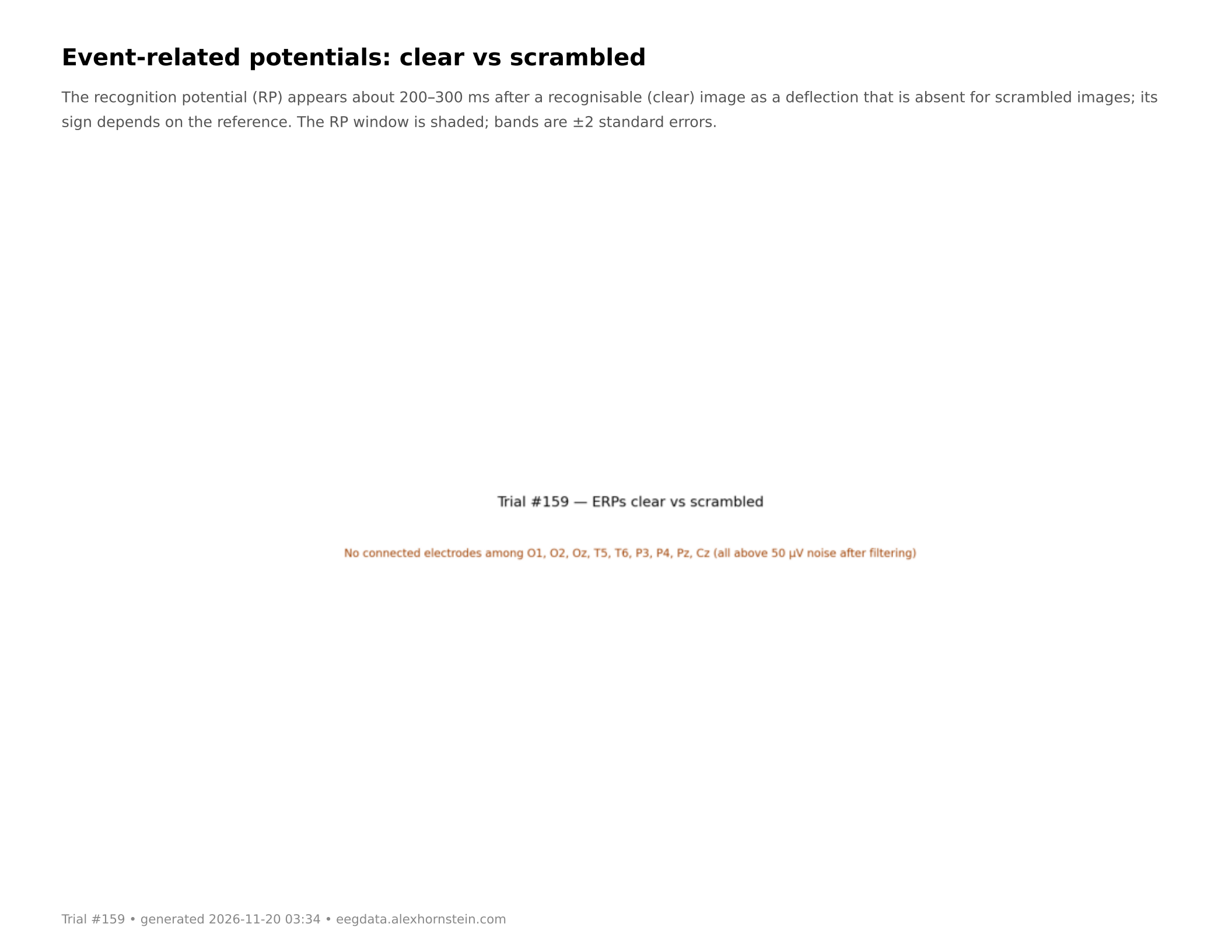
Subject	AF • recorded 05/26/2026 12:29:50.427 • dataset Celebrities
Stimuli	501 images: 71 clear, 430 scrambled • 65 keypresses (69 matched to clear images, median RT 413 ms)
EDF file	LL_20260423_210011.edf
Alignment	photodiode on CH21 (negative spikes, matched to odd images); clock offset 9955 ms (EDF header would give 2820579427 ms); 198/501 images matched; drift -6 ppm; jitter 37.0 ms
Electrodes	noise after filtering — O1 113 µV, O2 77 µV, T5 97 µV, T6 80 µV, P3 216 µV, P4 194 µV, Pz 286 µV, Cz 269 µV (✓ = used, threshold 50 µV)
Processing	60 Hz notch, 0.5–15 Hz bandpass, epochs -200 to 800 ms, baseline -200 to 0 ms, reject > 100 µV peak-to-peak

⚠ Only 58% of images matched a photodiode spike on CH21, so the alignment may be wrong. Check the alignment plot before trusting these averages.

⚠ No connected electrodes among O1, O2, Oz, T5, T6, P3, P4, Pz, Cz (all above 50 µV noise).

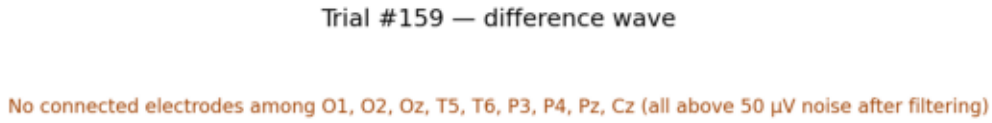
Event-related potentials: clear vs scrambled

The recognition potential (RP) appears about 200–300 ms after a recognisable (clear) image as a deflection that is absent for scrambled images; its sign depends on the reference. The RP window is shaded; bands are ±2 standard errors.



Difference wave (clear − scrambled)

Images arrive every ~330 ms, so each epoch also contains responses to neighbouring images. Subtracting the scrambled average removes that shared part and isolates the RP.



Keypress-locked average

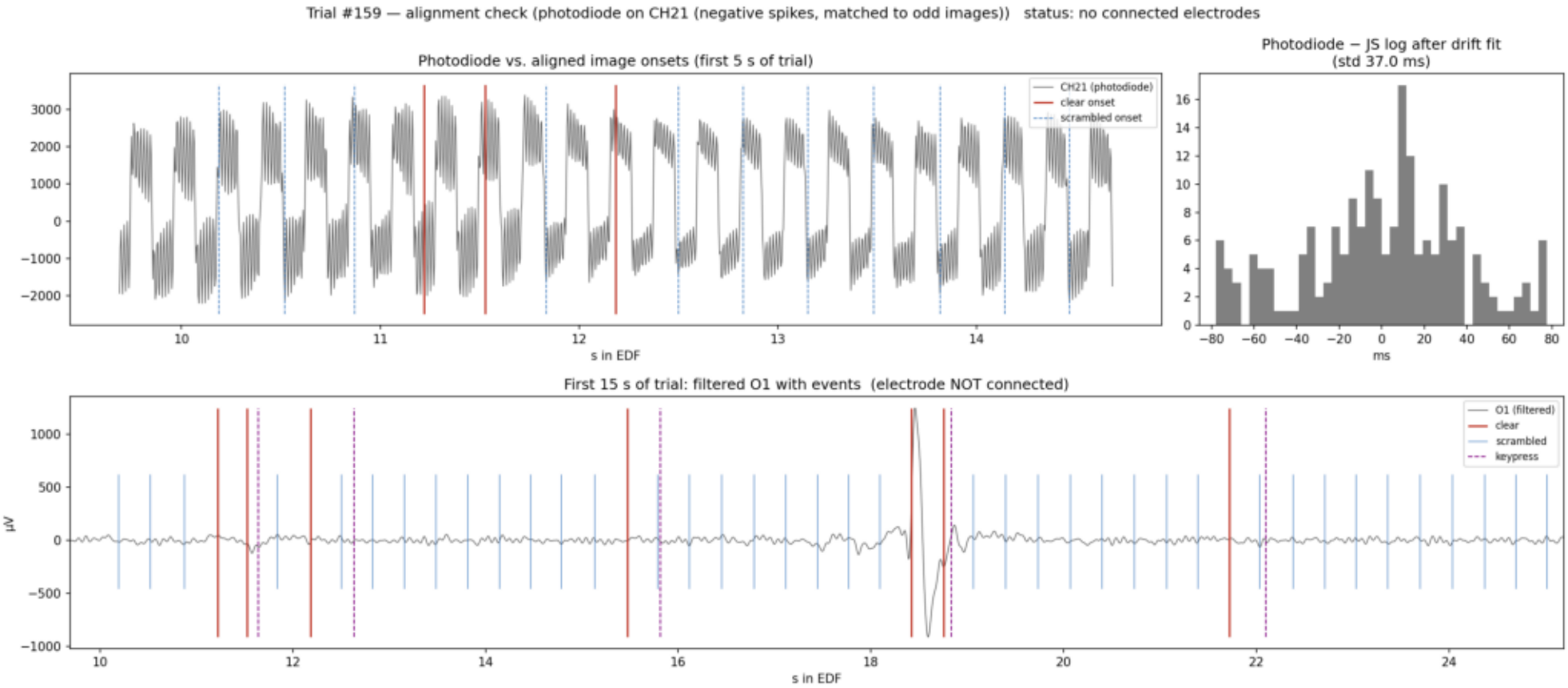
Checks whether activity tied to the button press, rather than recognition, drives the difference between clear and scrambled images.

Trial #159 — keypress-locked average

No connected electrodes among O1, O2, Oz, T5, T6, P3, P4, Pz, Cz (all above 50 µV noise after filtering)

Alignment check and signal overview

Each image onset is snapped to its photodiode spike. Bottom: the first 15 s of the filtered signal with image onsets and keypresses.



Analysis log

```
============================================================
Trial #159 — subject AF, 05/26/2026 12:29:50.427
  EDF: /home/japhy/eegdata/media/trialData/LL_20260423_210011.edf
  250 Hz, 183 s; 501 images (71 clear, 430 scrambled); 65 presses
  alignment: photodiode on CH21 (negative spikes, matched to odd images)
    offset 9955 ms (EDF header says 2820579427); 58% of images matched (typical 29%); drift -6 ppm; jitter 37.0 ms
  electrode noise (µV): O1 113, O2 77, T5 97, T6 80, P3 216, P4 194, Pz 286, Cz 269
  using: NONE
  69 of 71 clear images followed by a keypress (median RT 413 ms)
  status: no connected electrodes
```