Trial #143 — Recognition Potential Analysis

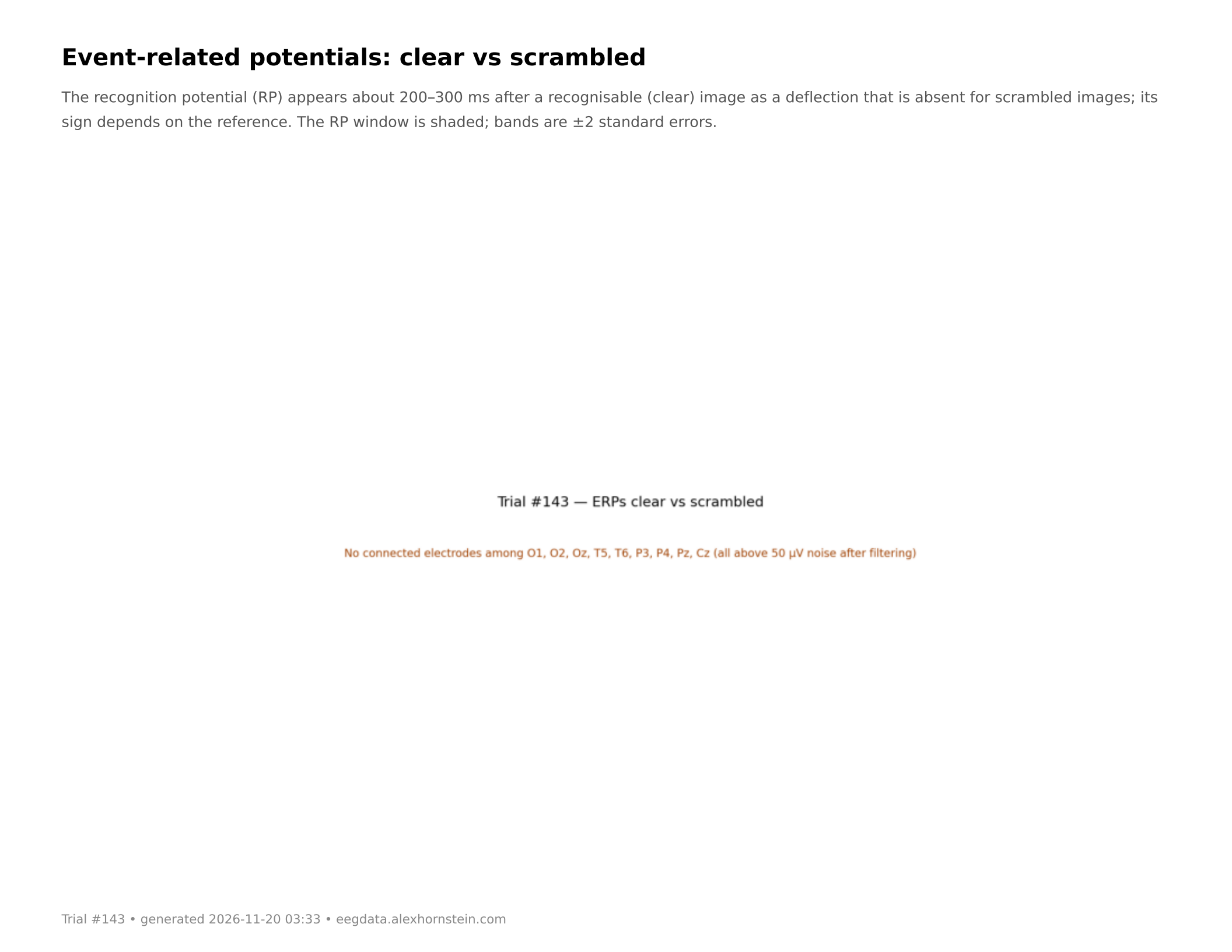
NO CONNECTED ELECTRODES

Subject	AF • recorded 02/01/2026 15:45:45.605 • dataset Celebrities
Stimuli	501 images: 66 clear, 435 scrambled • 63 keypresses (65 matched to clear images, median RT 414 ms)
EDF file	fp_20260201_154607.edf
Alignment	photodiode on CH21 (positive and negative spikes, matched to every image); clock offset 7582 ms (EDF header would give -21395 ms); 524/501 images matched; drift -176 ppm; jitter 17.9 ms
Electrodes	noise after filtering — O1 275 µV, O2 282 µV, T5 230 µV, T6 277 µV, P3 518 µV, P4 500 µV, Pz 385 µV, Cz 424 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

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

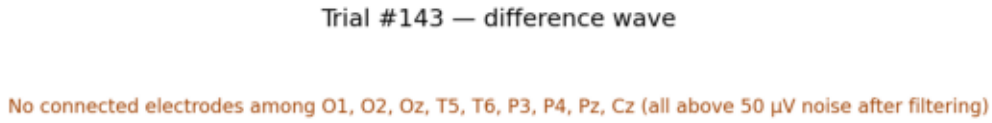
Event-related potentials: clear vs scrambled

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.



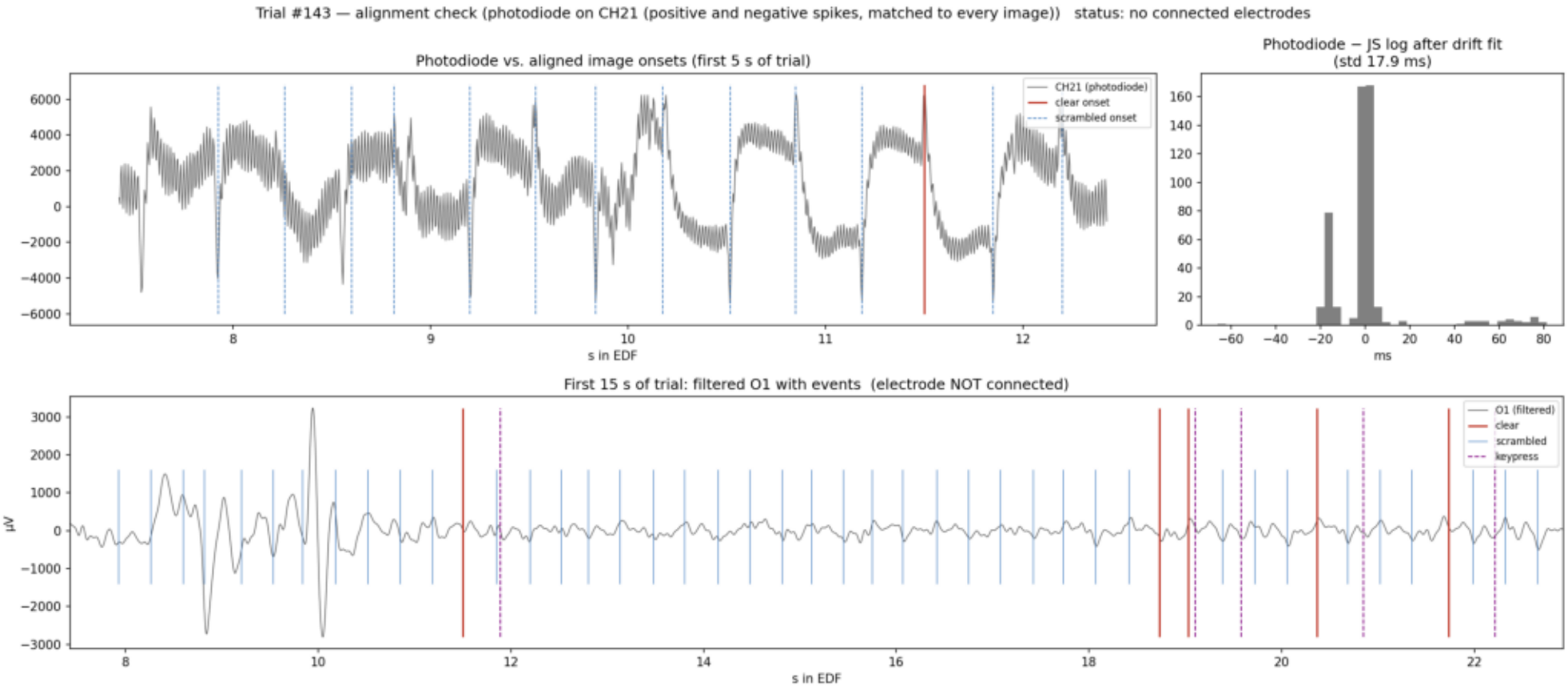
Keypress-locked average

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



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 #143 — subject AF, 02/01/2026 15:45:45.605
  EDF: /home/japhy/eegdata/media/trialData/fp_20260201_154607.edf
  250 Hz, 177 s; 501 images (66 clear, 435 scrambled); 63 presses
  alignment: photodiode on CH21 (positive and negative spikes, matched to every image)
    offset 7582 ms (EDF header says -21395); 98% of images matched (typical 37%); drift -176 ppm; jitter 17.9 ms
  electrode noise (µV): O1 275, O2 282, T5 230, T6 277, P3 518, P4 500, Pz 385, Cz 424
  using: NONE
  65 of 66 clear images followed by a keypress (median RT 414 ms)
  status: no connected electrodes
```