# Trial #66 — Recognition Potential Analysis

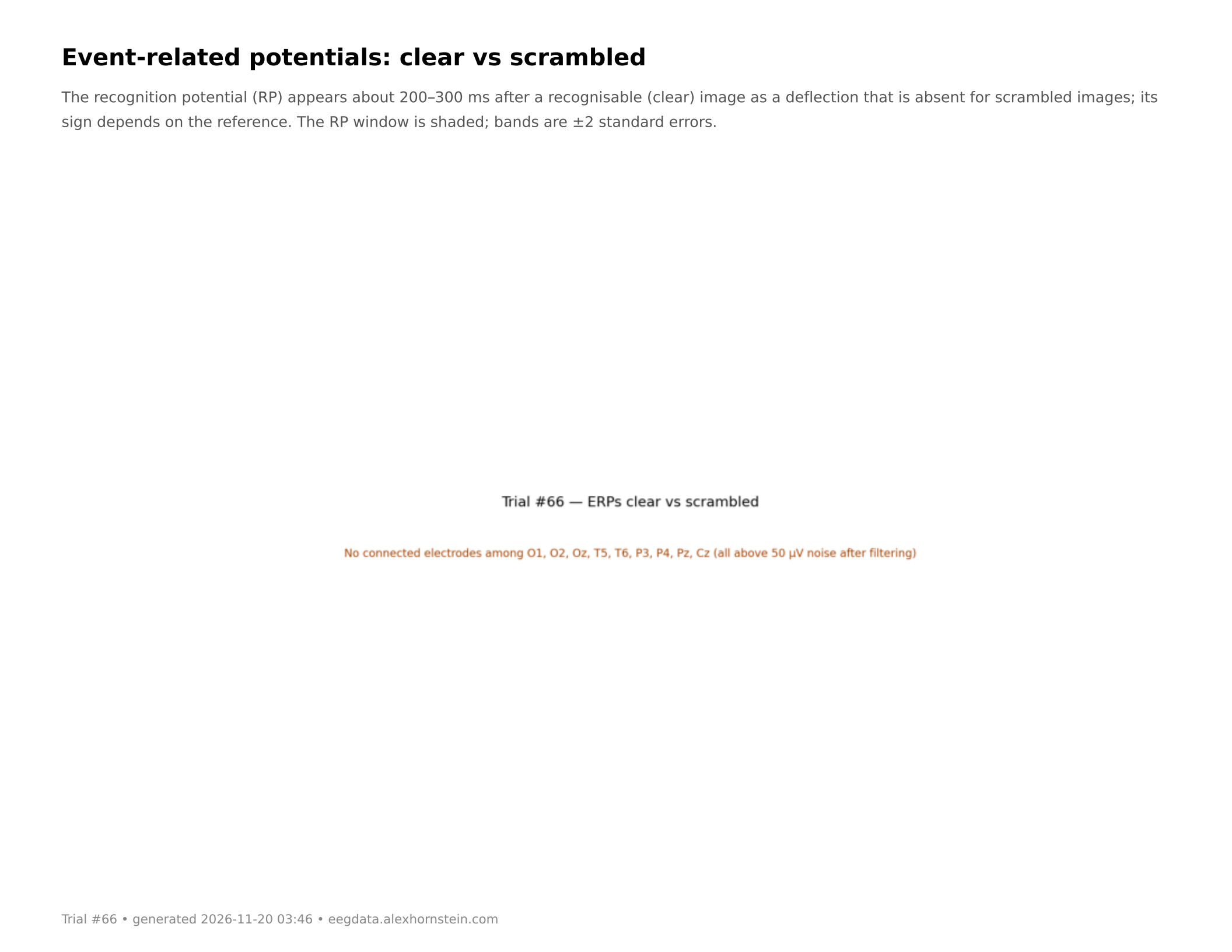
**NO CONNECTED ELECTRODES**

| | |
|---|---|
| **Subject** | PC • recorded 07/11/2025 15:34 • dataset Celebrities |
| **Stimuli** | 501 images: 65 clear, 436 scrambled • 66 keypresses (63 matched to clear images, median RT 469 ms) |
| **EDF file** | PC_20250621_073451.edf |
| **Alignment** | photodiode on F3 (positive and negative spikes, matched to every image); clock offset 4876 ms (EDF header would give 1756749000 ms); 441/501 images matched; drift -257 ppm; jitter 16.3 ms |
| **Electrodes** | noise after filtering — O1 111 µV, O2 266 µV, T5 1033 µV, T6 502 µV, P3 1941 µV, P4 1180 µV, Pz 1713 µV, Cz 255 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).

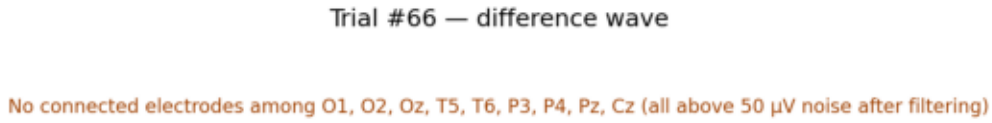
# Event-related potentials: clear vs scrambled

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

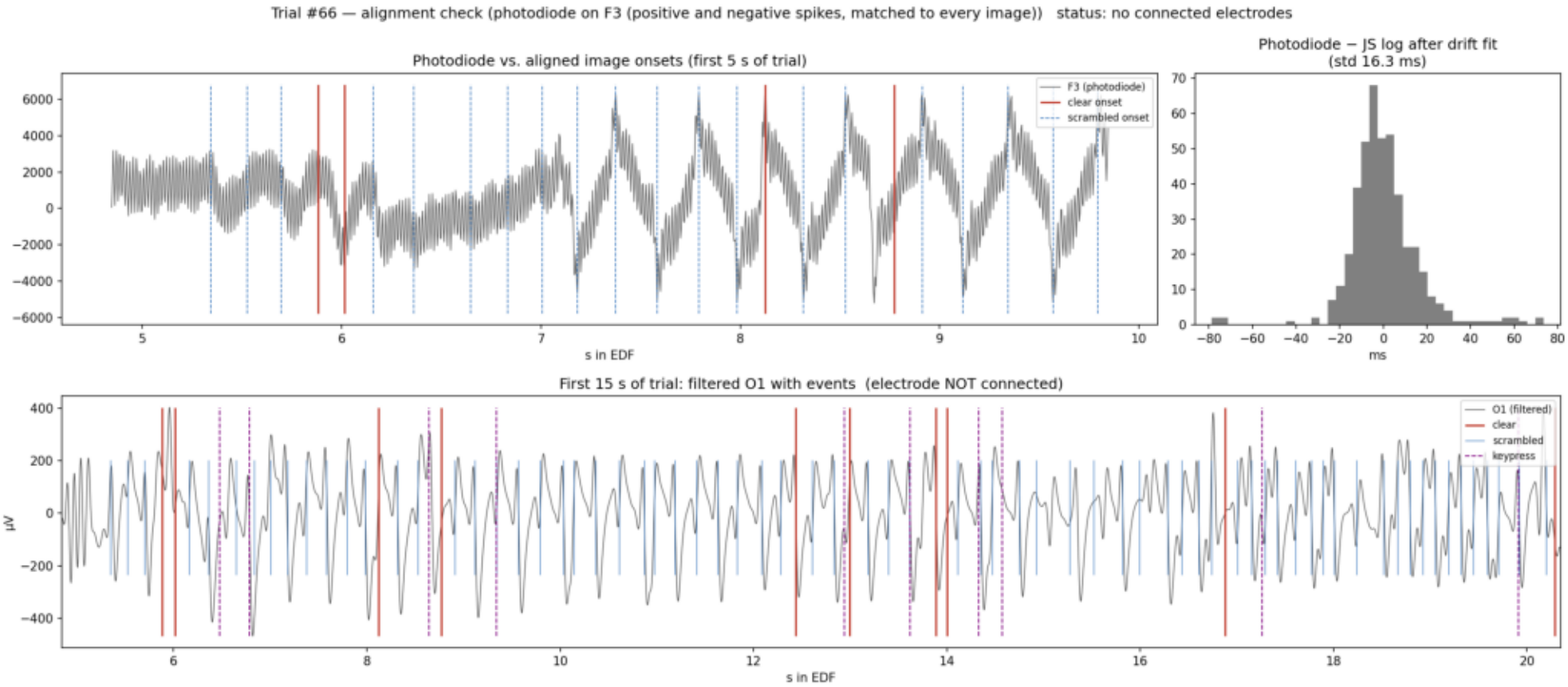
Checks whether activity tied to the button press, rather than recognition, drives the difference between clear and scrambled images.

Trial #66 — 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 #66 — subject PC, 07/11/2025 15:34
  EDF: /home/japhy/eegdata/media/trialData/PC_20250621_073451.edf
  250 Hz, 128 s; 501 images (65 clear, 436 scrambled); 66 presses
  alignment: photodiode on F3 (positive and negative spikes, matched to every image)
    offset 4876 ms (EDF header says 1756749000); 85% of images matched (typical 33%); drift -257 ppm; jitter 16.3 ms
  electrode noise (µV): O1 111, O2 266, T5 1033, T6 502, P3 1941, P4 1180, Pz 1713, Cz 255
  using: NONE
  63 of 65 clear images followed by a keypress (median RT 469 ms)
  status: no connected electrodes
```