Trial #37 — Recognition Potential Analysis

NO PHOTODIODE

Subject	V001 • recorded 9/17/2024 15:19 • dataset Celebrities
Stimuli	301 images: 44 clear, 257 scrambled • 43 keypresses (44 matched to clear images, median RT 440 ms)
EDF file	Alex_20240917_151917.edf
Alignment	EDF header time (fallback — UNRELIABLE)
Electrodes	noise after filtering — O1 100 µV, O2 181 µV, T5 99 µV, T6 199 µV, P3 129 µV, P4 286 µV, Pz 120 µV, Cz 123 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 photodiode channel matched the stimulus log, so image onsets come from the EDF header clock. Averages are probably smeared — treat with caution.

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

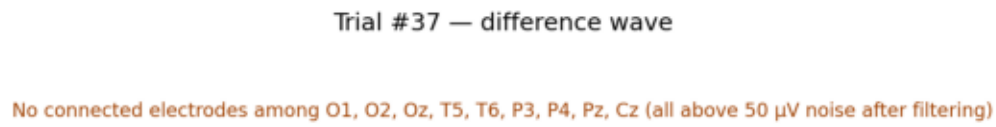
Event-related potentials: clear vs scrambled

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

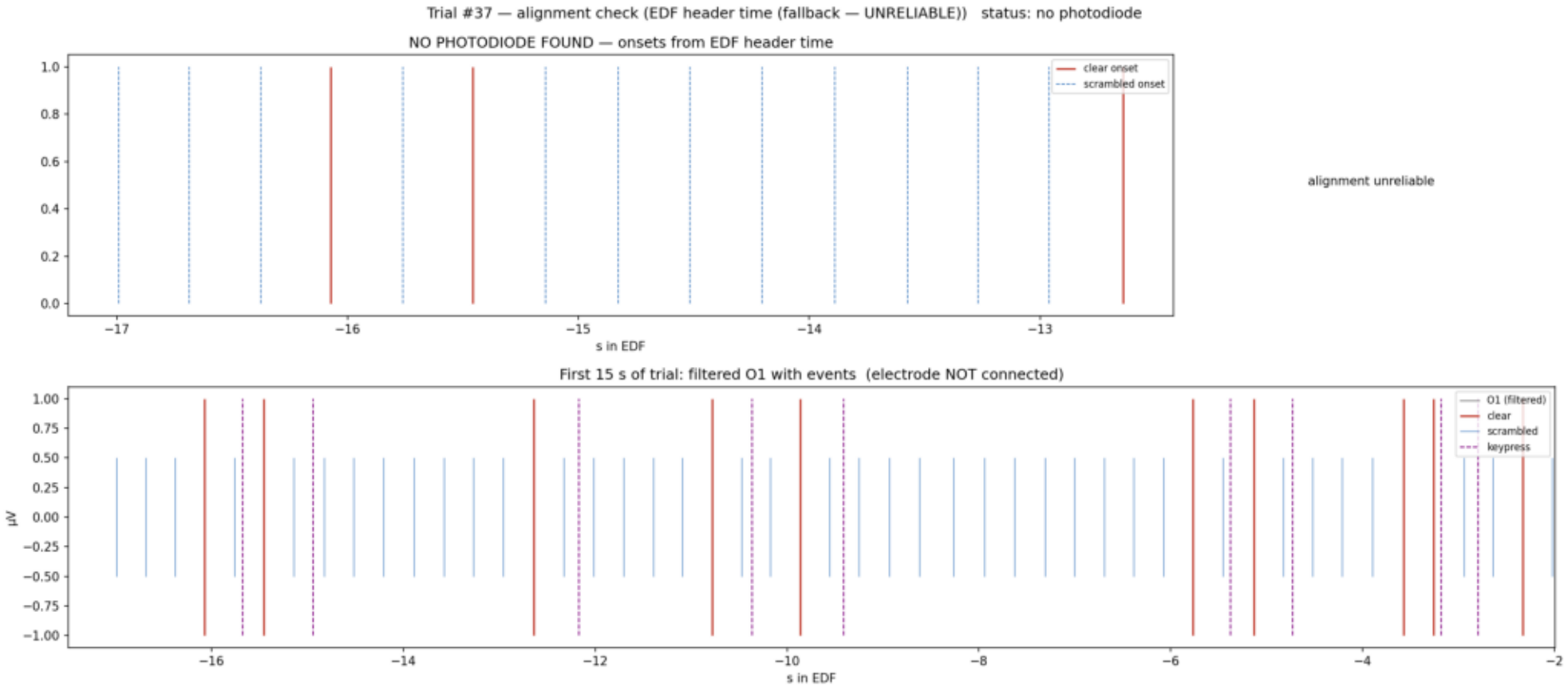
Checks whether activity tied to the button press, rather than recognition, drives the difference between clear and scrambled images.

Trial #37 — 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

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Trial #37 — subject V001, 9/17/2024 15:19
  EDF: /home/japhy/eegdata/media/trialData/Alex_20240917_151917.edf
  250 Hz, 115 s; 301 images (44 clear, 257 scrambled); 43 presses
  alignment: EDF header time (fallback — UNRELIABLE)
    WARNING: no photodiode found (closest: A2, 45% vs typical 31%)
  electrode noise (µV): O1 100, O2 181, T5 99, T6 199, P3 129, P4 286, Pz 120, Cz 123
  using: NONE
  44 of 44 clear images followed by a keypress (median RT 440 ms)
  status: no photodiode
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