

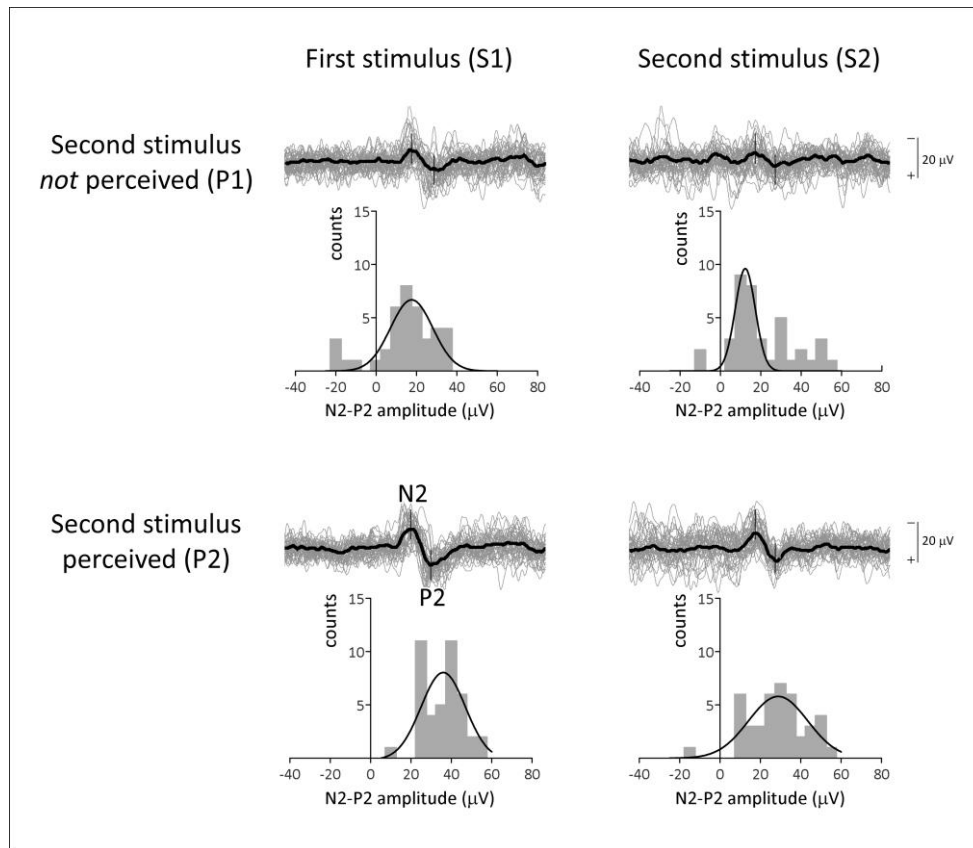


Figure S2. Single-trial analysis of LEPs elicited by two rapidly-succeeding laser stimuli. Single-trial waveforms (from one representative subject) are superimposed, in grey, while the average waveform is shown as a thick black line (Cz vs. nose reference). All stimuli elicited a negative-positive biphasic wave (N2-P2). In each single trial, the latency and amplitude of the N2 and P2 waves were estimated using an automated and unbiased method based on a multiple linear regression (Mayhew et al., 2006). We examined whether the reduction in magnitude of the N2-P2 biphasic wave observed in the average waveforms of unperceived stimuli was due (i) to an overall reduction of response magnitude in all single trials, or (ii) to the fact that unperceived trials contained a mixture of trials without an N2-P2 response and trials with an N2-P2 response of normal magnitude. The former hypothesis would be supported by a unimodal distribution of single-trial N2-P2 peak-to-peak amplitudes, while the latter hypothesis would be supported by a bimodal distribution of single-trial N2-P2 peak-to-peak amplitudes. The histograms show the frequency distribution of the measured single-trial N2-P2 peak-to-peak amplitudes (x axis, 5- μ V amplitude bins; y axis, number of

trials). For each subject, this distribution was fitted to a single Gaussian function (unimodal distribution) and to the sum of two Gaussian functions (bimodal distribution). The Akaike Information Criterion indicated that the unimodal distribution was 24.7 times more likely to explain the data than the bimodal distribution, taking into account the number of free parameters of each model (Bozdogan, 1987). Thus, even at the level of single trials, it would appear that unperceived stimuli did elicit an N2-P2 response, albeit of reduced magnitude.

References

Bozdogan H (1987) Model selection and Akaike's Information Criterion (AIC): The general theory and its analytical extensions. *Psychometrika* 52:345-370.

Mayhew SD, Iannetti GD, Woolrich MW, Wise RG (2006) Automated single-trial measurement of amplitude and latency of laser-evoked potentials (LEPs) using multiple linear regression. *Clinical Neurophysiology* 117:1331-1344.