Face processing and the expression of race bias: Effects of between- and within-person variability in motivation to engage control.

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This poster presented a series of multilevel models which investigated the trial-by-trial effects of person construal on control over behavioral race bias, and in turn, the effect of the previous-trial conflict signal associated with control engagement on subsequent person construal.

Please feel free to contact me for more information! Our full manuscript is currently in preparation.

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**Analytical Approach**

To test the hypotheses that (1) greater P2 amplitudes on Black-prime trials will result in a smaller discrepancy in RT and accuracy to tools vs. guns for those high in IMS and low in EMS; and (2) greater MFN activation (i.e., more negative amplitudes) on the previous trial will predict greater P2 amplitudes, but only for those high in IMS and low in EMS, a series of multilevel models were conducted. To assess the effect of trial-to-trial fluctuations in the ERP signals, the between- and within-person components were disaggregated (see Curran & Bauer, 2011; Volpert-Esmond et al., 2018). The within-person component of each relevant ERP was allowed to interact with target type and top-down motivation to control prejudice (i.e., IMS and EMS). The between-person ERP component was entered into each model as a covariate. To reduce the number of terms in each model, and because the IMS and EMS focus only on motivations to withhold anti-Black bias, only Black-prime trials were considered, with the exception of the previous-trial MFN term in the final model which included MFN amplitudes on all possible trial types. IMS and EMS scores were grand-mean centered. Target was contrast-coded so that tools corresponded to a value of 1 and guns to -1.

To build the multilevel models, we began with the maximal model (i.e., all possible Level-1 terms included as random effects) and removed random effects until the data were sufficiently explained by the model via chi-square tests. Models which attempted to include the within-person ERP as a random effect did not converge and were not considered. The final models are given below in Wilkinson notation (see Volpert-Esmond et al., 2018):

1. RT on a given Black-prime trial ~ P2 Between + P2 Within\*Target\*IMS\*EMS + (1+Target|Participant).
2. Probability of a correct response on a Black prime trial ~ P2 Between + P2 Within\*Target\*IMS\*EMS + (1+Target|Participant).
3. Current-trial P2 ERP elicited by Black faces ~ MFN between + MFN Within\*IMS\*EMS + (1|Participant).

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**Supplementary Figure 1**

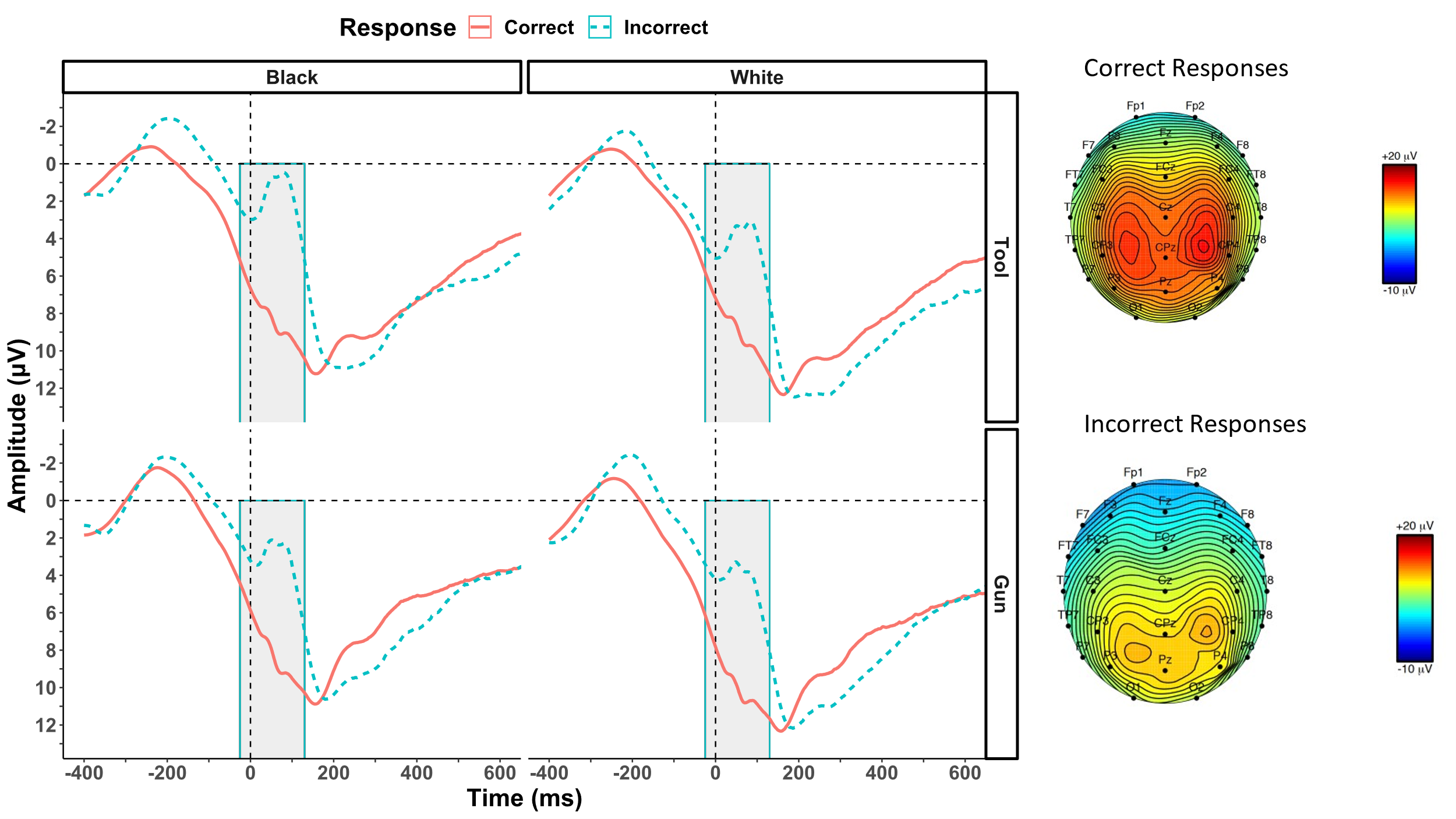
The grand-average, face-locked P2 ERP waveforms.



*Note.* The shaded area represents the P2 quantification window. Baseline correction was performed -200 to 0ms pre-stimulus. Grand average amplitudes elicited by Black faces (*M* = 2.01, *SD* = 2.56) was significantly greater than amplitudes elicited by White faces (*M* = 0.56, *SD* = 2.54), *t*(130) = 12.06, *p* < .001 , 95% CI [1.21, 1.69], *d* = 1.05.

**Supplementary Figure 2**

The grand-average, response-locked MFN ERP waveforms.



***Note.***The shaded area represents the MFN quantification window. Black-tool errors (*M* = 2.35, *SD* = 4.70) produced the largest (i.e., most negative/least positive) amplitude, *F*(1, 130) = 12.12, *p* = .002, *η*2p = 0.09. Further follow-up comparisons are available upon request.