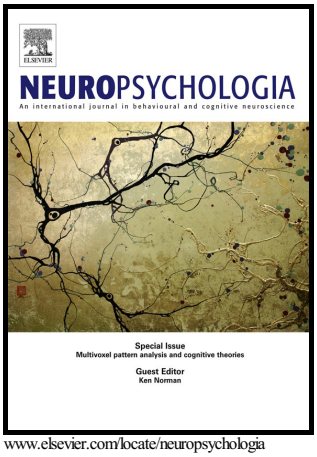
Racial bias in empathy: Do we process dark- and fair-colored hands in pain differently? An EEG study

Sarah Fabi, Hartmut Leuthold



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Racial bias in empathy: Do we process dark- and fair-colored hands in pain differently? An EEG study

Sarah Fabi*, Hartmut Leuthold

Department of Psychology, University of Tübingen, Germany

*Address correspondence to: Sarah Fabi, Department of Psychology, Eberhard Karls University of Tübingen, Schleichstr. 4, 72076 Tübingen, Germany. Phone: +49 (0)7071 29-77143. Email: sarah.fabi@uni-tuebingen.de

Abstract

The aim of this study was to identify racial bias influences on empathic processing from early stimulus encoding, over categorization until late motor processing stages by comparing brain responses (electroencephalogram) to pictures of fair- and dark-colored hands in painful or neutral daily-life situations. Participants performed a pain judgment task and a skin color judgment task. Event-related brain potentials (ERPs) substantiated former findings of automatic empathic influences on stimulus encoding, reflected by the early posterior negativity (EPN), and late controlled influences on the stimulus categorization, as reflected by the late posterior positivity (P3b). Concerning the racial bias in empathy (RBE) effect, more positive amplitudes in the 280-340 ms time window over frontocentral electrodes in the painful than the neutral condition for fair- but not dark-colored hands speak for an early influence of racial bias. This was further supported by correlations with empathic concern scores for fair- but not dark-colored stimuli. Additionally, P3b amplitude differences between fair- and dark-colored hands to painful stimuli increased with the implicit racial attitude of participants, suggesting that the categorization stage is not completely immune to racial bias. Regarding the motor processing stages, power change values in the upper beta-band (19-30 Hz) revealed for painful compared to neutral stimuli larger facilitation of sensorimotor