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An Evoked Potential Study of the Cross-Race Effect of Facial Recognition in the South African Context

Daniel John Greenslade

Abstract

This research aimed to explore and contextualise research on the electrophysiological potentials evoked in response to human face recognition within the South African context. Previous research provides evidence that there is a measurable difference in the electrophysiological response to faces of people of other racial groups when compared to the response to one's own race group. The difference is seen in greater peak amplitudes in response to one's own-race (indicating greater attention being granted) in comparison to the other-race. This has been labelled the Cross-Race Effect. This research also attempted to expand on previous research in the use of a mixed-race sample and realistic colour images, in contrast to previously used greyscale images. A purposive sample of 40 students at the University of the Witwatersrand was split equally between gender and race (Black and White) with an Indian control group. The electrical potentials elicited by the facial stimuli were extracted from the ongoing electroencephalograms. The results obtained displayed inverse results to those found internationally, with Black participants eliciting no differences between racial groups, and White participants eliciting a greater peak amplitude to Black (other-race) faces. A gender effect was also seen, with White participants eliciting greater peak amplitudes towards female faces, while Black participant again showed no differences between male and female faces. Trends displayed in the results, and the significance thereof, are discussed, and the importance of the effect of society of developmental neurology is highlighted, with the rephrasing of cultural neuroscience to Socio-Cultural Neuroscience. The results ultimately suggest that the internationally seen cross-race effect is absent in a young South African population (with the principle of increased exposure leading to increased attention still in effect), indicating that South Africa is beginning to move away from racial discrimination, and moving towards a future of true integration and equality.

Key Words: Evoked Potential; Facial Recognition; Cross-Race Effect