

Faster eye responses in Chinese people not down to culture

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A face is scanned by saccadic movements of the observer's eye. Credit: Simon Viktória/Wikipedia

New research from University of Liverpool scientists has cast doubt on the theory that neurological behaviour is a product of culture in people of Chinese origin.

Scientists tested three groups – students from mainland China, British people with Chinese parents and white British people – to see how quickly their eyes reacted to dots appearing in the periphery of their vision.

These [rapid eye movements](#), known as saccades, were timed in all of the participants to see which of them were capable of making high numbers of express saccades – particularly fast responses which begin a tenth of a second after a target appears.

The findings, published in the journal *PLoS One*, revealed that similar numbers of the British Chinese and mainland Chinese participants made high numbers express saccades, with the white British participants made far fewer. Culturally the British Chinese participants were similar to their white British counterparts and different to the mainland Chinese students.

Therefore in terms of eye movement patterns, Chinese ethnicity was more of a factor than culture. This is contrary to several previous reports from other research groups which looked at behaviour in Asian and white participants and concluded that culture explained behavioural differences between groups.

Neurophysiologist, Dr Paul Knox, from the University's Institute of Ageing and Chronic Disease, led the study. He said: "Examining saccades from different populations is revealing a lot about underlying brain mechanisms and how we think.

"Many scientists believe that the eye movement patterns you develop are due to where you live – the books you read and the influence of your family, peers and community – your culture."

"Our research has shown that this cannot be the case, at least for saccade behaviour. What this leaves is the way we're made, perhaps our genetics. And this may have a bearing on the way the brains in different groups react to injuries and disease."

All of the participants completed questionnaires which evaluated their

cultural values. They then wore a headset and looked at a plain white board on which lights appeared. The headset measured the time it took for participants' eyes to react to the lights as they appeared in different places on the board.

Twenty-seven percent of Chinese participants responded with high proportions of express saccades, similar to 22% of the British Chinese, but many more than the 10% of white British participants.

Dr Knox concluded: "From a situation where 80% of our understanding of neuroscience was derived from tests on US psychology undergraduates, we're now showing how the human brain is not just amazingly complex in general, but also highly variable across the human population."

More information: Cultural diversity and saccade similarities: culture does not explain saccade latency differences between Chinese and Caucasian participants, *PLoS One*, 2014.

Provided by University of Liverpool

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