

# Research shows that smiling affects the way our brains process other people's emotions

June 29 2015, by George Wigmore

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An international team of researchers have found that when we smile it actually changes the way our brains process other people's emotions.

Led by researchers in the Cognitive Neuroscience Research Unit (CNRU), City University London, the paper – which is published in the journal *Social Cognitive and Affective Neuroscience* – provides novel evidence that our own emotions can influence the way the brain processes other people's observed expressions.

Speaking about the research, Professor Tina Forster, head from the CNRU at Psychology Department, City University London, said: "We have shown for the first time that early neural processing of other's [faces](#) is modulated depending on our own facial expression. Our work shows

support for the colloquial phrase that 'if you smile, the world will smile back to you', as when other people smile we found that participant's brains process a neutral face as if it was smiling."

Asking participants to adopt either a happy or a [neutral facial expression](#) as they looked at photographs of faces that were either smiling or showing a neutral expression, the team used a technique called EEG (electroencephalography) to measure changes in brain activity for the 25 participants in the study. Focusing on two spikes of electrical activity that are unique to the processing of faces in the brain that typically occur between 150 and 170 milliseconds after looking at a face, known as the VPP and N170, the team noticed that when making a happy [expression](#), neutral faces are processed similarly to [happy faces](#).

"I think this effect occurs because there is a close link between the body and our mind," said Professor Forster. "The fact that when we [smile](#) we also interpret neutral expressions as smiling too shows how information coming from our body can influence our cognition. Some therapists have already made use of this particular phenomena by asking their clients to exercise smiling throughout the day. However, I think we need more research to understand this effect in people with mood disorders or certain predispositions."

In the future, Professor Forster and others at City are looking to investigate the role our body and body representations in our brain play in cognition.

"Together with Drs Beatriz Calvo-Merino (co-author in the paper mentioned above) and, Ansgar Endress, we recently won some funding in the City University Research Competition to further explore how we can enhance emotion sensitivity in dance. This project will involve dance performers and us scientists working together to find a new approach to develop performing arts," she said.

Provided by City University London

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