Science UK: What does your face say? – text

How many different emotions do you think you can communicate to people with your face? Do you have the same facial expressions as people from different cultures? Read this to find out what scientists have just discovered about this fascinating topic.

New research suggests that there are only four basic facial expressions of emotion. However, how these expressions are interpreted might depend on where you are from.

Research by scientists from the Institute of Neuroscience and Psychology at the University of Glasgow has challenged the traditional view of how the face expresses emotions. Until now, it was widely believed that six basic emotions (happiness, sadness, fear, anger, surprise and disgust) were expressed and recognised across different cultures. However, the University of Glasgow's work now suggests that the human face only has four basic expressions of emotion. This is because some pairs of emotions are impossible to distinguish, especially when they are first registering on the face. Fear and surprise, for example, both share wide open eyes. The facial expressions for anger and disgust also look the same.

So if our faces are only able to express four basic emotions, how do we communicate a much more complex variety of feelings? The study found that the way expressions are interpreted is different in different cultures. Lead researcher Dr Rachael Jack was studying this because 'facial expressions were considered to be universal', she explains. However, while looking at how people from the East and West look at different parts of the face during facial expression recognition, they found that although there are some common features across cultures, the six basic facial expressions of emotion are not recognised universally.

'We said we don't know what a disgust face looks like in China, so the best way to go about that is to make all combinations of facial movements and show to Chinese observers and ask them to choose the ones they think are disgust faces.' With the software they developed, they discovered that in the early stages of signalling emotion, fear and surprise, and anger and disgust, were often confused. Jack explains that these facial expressions have developed both from biology and social evolution.

What interests people about the cross-cultural aspect of the research? 'This work leads to understanding which emotions we share, appreciating our differences and highlighting our multicultural global experiences.' This research could inform new ways of social communication that facilitate cross-cultural interactions. 'You can have a Skype system where you might be interacting with someone in Japan,' Jack explains. 'The system would interpret your facial expressions based on knowledge of Western facial expressions, then interpret that for the Japanese observer. You can imagine they would have an avatar of the person's face, and the facial expression would be translated into the Japanese facial expression on the avatar.'

If you're interested in science check out the British Council's science magazine called Cubed.