

Laughter is not just funny

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(PhysOrg.com) -- Everybody enjoys a laugh but new research from an international team shows it's not as simple as you might think.

Most people consider laughter as a sign of happiness, but now scientists from Newcastle and Germany have shown it can convey a range of emotions, each processed by a different part of the [brain](#).

And the information could be used to revolutionise the way patients with neuro-degenerative diseases are able to communicate. This could have an increasing benefit as the effects of an ageing population continue to be felt.

The latest part of the project, which has been running since 2003, is published in the journal *Neuroimage*. In it, scientists from Newcastle University and the University of Tuebingen, in Germany, show how a group of volunteers were able to recognise three different negative and

positive forms of laughter, (joy, taunting, and tickling) simply by listening to it, and that different networks and pathways in the brain decode different types of laughter.

The aim of the unique project is to investigate how emotions are expressed and perceived in non-verbal communication, such as laughter.

This could potentially be of great benefit in the future to people who have difficulty in recognising and expressing their [feelings](#) and emotions, for example those with Parkinson's disease and Alzheimer's.

Laughter is an essential part of human communication, but before recent studies, little was known about how the brain processes different forms of laughter or how this could help with communication.

Scientist Kai Alter, senior lecturer in the Institute of [Neuroscience](#) at Newcastle University, one of the researchers involved with the project, said: "We have investigated three different types of laughter, two positive, one negative. They are joy, tickling and taunting. We are the first group to investigate different types of laughter, and the basic brain mechanisms during recognition.

"For our experiment we recorded actors performing each of these laughs in different ways and then got volunteers to listen to the tapes. They were able to identify the type of laughter just by listening to the tapes, which showed us that human emotions are passed on in laughter in a clear way.

"Because of this we were then able to try to find the regions of the brain which process those emotions by using an MRI scanner on the volunteers while they were listening to laughter. Different regions of the brain were in use when different types of laughter were being processed.

“Further study is needed but we can now investigate the networks in the brain which become damaged when people suffer from these neuro-degenerative illnesses, by studying how people with these conditions react to different types of [laughter](#) and other non-verbal communication, such as exclamations.

“Therapists and relatives of patients, as well as doctors could be trained to spot what they are trying to communicate, and new ways of communicating at a lower cognitive level could be developed.”

Provided by Newcastle University

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