

**SOUNDS OF JOY - AN INVESTIGATION OF VOCAL EXPRESSIONS OF POSITIVE EMOTIONS** *Disa Sauter<sup>1</sup>, Jade**Wiland, Jane Warren, Frank Eisner, Andy Calder<sup>3</sup>, Sophie K Scott<sup>4</sup>;**<sup>1</sup>Department of Psychology, University College London, UK, <sup>2</sup>Hammersmith Hospital, London, UK, MRC Cognition and Brain Sciences, Cambridge, UK,**<sup>4</sup>Institute of Cognitive Neuroscience, University College London, UK - A*

series of experiments tested Ekman's (1992) hypothesis that there are a set of positive basic emotions that are expressed using vocal para-linguistic sounds, e.g. laughter and cheers. The proposed categories investigated were amusement, contentment, pleasure, relief and triumph. Behavioural testing using a forced-choice task indicated that participants were able to reliably recognize vocal expressions of the proposed emotions. A cross-cultural study in the preliterate Himba culture in Namibia confirmed that these categories are also recognized across cultures. A recognition test of acoustically manipulated emotional vocalisations established that the recognition of different emotions utilizes different vocal cues, and that these in turn differ from the cues used when comprehending speech. In a study using fMRI we found that relative to a signal correlated noise baseline, the paralinguistic expressions of emotion activated bilateral superior temporal gyri and sulci, lateral and anterior to primary auditory cortex, which is consistent with the processing of non linguistic vocal cues in the auditory 'what' pathway. Notably amusement was associated with greater activation extending into both temporal poles and amygdale and insular cortex. Overall, these results support the claim that 'happiness' can be fractionated into amusement, pleasure, relief and triumph.