Brain processes social information at high priority

April 1 2016

Our brain automatically pays great attention to everyday actions linked to a social context. Researchers from Bochum have verified this fact with the aid of hypnosis.

Brain is sensitive for social information

An international research team has found that our perception is highly sensitised for absorbing social information. The brain is thus trained to pay a great degree of attention to everyday actions. The results are reported by neuroscientist Prof Dr Martin Brüne and philosopher Prof Dr Albert Newen, both from Ruhr-Universität Bochum (RUB), together with Eleonore Neufeld and other colleagues in the journal *Consciousness and Cognition*.

Hypnosis switches off attention precisely

For the purpose of the study, the researchers analysed bottom-up attention separately from targeted top-down attention. In order to separate both attention processes, the team used hypnosis. Thus, they switched off the top-down processes in their test participants. Hypnotised, the study participants viewed video clips where people put coins into different-coloured bowls. The researchers had expected that processing of social information - in this case everyday activities of other people - would be prioritised under hypnosis, because the brain processes them automatically in the bottom-up attention process.

Automatic processing of social information

Using electroencephalography (EEG), the research team recorded the signal that indicates in what way intentional actions are processed. They compared that specific signal, i.e. mu-suppression, in the hypnotised and non-hypnotised state. The result: mu-suppression was - as expected - stronger if the participants were hypnotised. If top-down attention processes are switched off through hypnosis, the brain thus prioritises the processing of social information. This suggests that everyday actions are generally given particular attention. "The research results support the view of humans as beings whose social competence sets them apart from animals," says Albert Newen.

Analysing cognitive processes with hypnosis

The results thus support the Social Relevance Hypothesis, which postulates that the processing of everyday actions is automatically given more attention. Moreover, the project demonstrates to what extent hypnosis is a viable option for analysing cognitive processes.

More information: Eleonore Neufeld et al. Intentional action processing results from automatic bottom-up attention: An EEG-investigation into the Social Relevance Hypothesis using hypnosis, *Consciousness and Cognition* (2016). DOI: 10.1016/j.concog.2016.03.002

Provided by Ruhr-Universitaet-Bochum