on nach einer Expositionstherapie bei spezifischen Phobien hätte nicht nur Potential für die Behandlung von spezifischen Phobien, sondern möglicherweise auch für die Behandlung weiterer Angststörungen oder Störungsbilder, die ebenfalls mit Expositionsverfahren behandelt werden wie beispielsweise Suchterkrankungen.

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Getting closer to real-life experience in research. An investigation of emotional faces and scenes using fMRI

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In neuroscience, emotions are commonly investigated using visual emotional stimuli and modern neuroimaging techniques like functional magnetic resonance imaging (fMRI). These visual stimuli frequently include images of emotional faces or emotional evocative scenes. Yet, only few researchers investigated whether these kinds of stimuli elicit similar or different patterns of activation in the brain. The main goal of the current study is to find a set of stimuli that does consistently activate emotional networks within the brain and does provide a basis for reliably studying emotions in patient populations. In this fMRI study nineteen healthy volunteers from a student population passively viewed blocks of emotional faces (Radboud Faces Database) and emotionally evocative scenes (Nencki Affective Picture System), both interleaved with a neutral baseline condition. BOLD activation patterns to both stimulus types were respectively compared to baseline and in contrast to each other. Subjective ratings of discrete emotions and arousal were examined in addition. Faces and scenes activated similar structures, containing occipital cortex, fusiform gyrus and right inferior frontal gyrus. Faces additionally activated inferior and middle temporal gyrus. Scenes additionally activated anterior cingulate cortex, superior parietal lobe, thalamus, caudate nucleus, putamen, insula, hippocampus, amygdala, brainstem and cerebellum. In accordance with actual literature on emotions, these results suggest that there are functional circuits processing different aspects of emotions rather than distinct brain regions for discrete emotion categories. Furthermore emotionally evocative scenes may produce a more stable activation pattern since they are closer related to real life experiences of emotions.

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Hands In Virtual Reality: Using the Leap Motion Controller for Clinical and Cognitive Research

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Computer-generated visual presentation of immersive virtual environments have been an important, yet relatively exclusive research tool in clinical and cognitive psychology for decades. The therapeutic utilization of Virtual Reality (VR) is now more accessible than ever following the second technological VR revolution in 2012 which brought about mass-media compatible VR headsets, accessible software-development kits, and rapid development of affordable displays and other tools. Of particular interest, body-tracking technologies are increasingly available and natural user interfaces – for instance, by means of hand-tracking devices and/or gesture control – are at the leap of becoming the default input device for VR platforms. Noninvasive hand-tracking by means of the Leap Motion controller can also allow for novel research perspectives in clinical and cognitive psychology. In this talk, I demonstrate the setup validity of including hands in the Oculus Rift DK2 VR headset in a series of loosely associated experimental results. By including real-time perceptual action-effects, presence and immersion can be increased. Moreover, the real-hand setup allows for convenient testing of overt manual behavior. A replication of the behavioral bias for food in the VR setup is shown and further results highlight that interaction intention can continuously bias the execution of action in the case of unhealthy food. Moreover, cognitive effects such as the mental association between space and number replicate in the setup, allowing for more fine-grained perceptual and motor manipulations. In sum, hand-tracking technologies appear a valid tool for experimental research. Caveats include constant software maintenance, additional noise in measurements, and limited sensor space.