(voxel: 1.4x1.4x2mm) to see which cortical regions were activated. In the scanner, the subjects performed a motion 1-back task on stimuli created by combining two trained line-drawings that can be translated to real words (RW), pseudo-words (PW), and consonant strings (CS), plus stimuli created with novel line-drawings (NV). We found a left fusiform region in all 10 subjects that responded more strongly to RW than to NV. The location of this region was either overlapped with (4 subjects) or adjacent to (6 subjects) the VWFA. Further, the functional profile of this region was similar to that of the VWFA, as it responded equally to RW, PW and CS, but significantly less strongly to NV. Our data suggests that the selectivity of newly-learned objects is developed near the region responsive to experientially associated but not visually similar stimuli.

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ACUTE ALCOHOL AND THE RAPID DETECTION OF VISUAL CHANGE *J. Leon Kenemans, Wendelien Hebly, Eveline H.M. Van den Heuvel, Tineke Grent-'t Jong; Utrecht University, Deps. of Psychonomics and Psychopharmacology* – Moderate doses of alcohol (BAC of about 0.5 %) may result in acute impairments at various levels of information processing. A number of reports have documented detrimental effects of moderate alcohol on the Mismatch Negativity (MMN), the electrocortical manifestation of a rapid (100 ms post-stimulus) mechanism dedicated to the detection of unexpected auditory change (e.g., Jääskeläinen et al. (1995), Alc Clin Exp Res, 19, 607-610). Recently, we and others identified a partial visual counterpart of the MMN, sometimes called the Rareness-Related Negativitity (RRN). Analogous to the MMN, the RRN evolves at about 100 ms after the unexpected change, and was localized in visual cortex (Kenemans et al. (2003), NeuroRep 14 (1243-1246). Rapid detection of unexpected events is important for everyday-life conditions like driving, prompting the question whether the visual RRN shows sensitivity to moderate alcohol similar to the MMN. In the present study the designs of Jääskeläinen et al. (1995) and of Kenemans et al. (2003) were both applied in 16 subjects, either under moderate alcohol or under placebo. Unexpected visual change was implemented by presenting 2.4 versus 0.6 c/d gratings in pseudo-random sequences according to a deviant (10 %)/ standard (90 %) schedule. The alcohol effects on MMN reported before were replicated. Furthermore, the RRN, defined as the difference between deviant and standard ERPs between 140 and 170 ms at Oz, was present under placebo, but not under alcohol. It is concluded that moderate alcohol does indeed impair the rapid detection in visual cortex of unexpected changes.

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LEARNING TO RECOGNIZE FACES THROUGH NOISE: AN FMRI STUDY *Ke Zhou, Jia Liu; The Key Lab of Cognitive Science, Graduate School & Institute of Biophysics, Chinese Academy of Science, Beijing, P.R. China* – If an object embedded within noise is encountered repeatedly, our initial vague impression will be replaced by a concrete percept. What are the neural correlates of this perceptual improvement? To address this question, here we used fMRI to track the changes of neural activities of the Fusiform Face Area (FFA) when subjects were learning faces. Specifically, in training sessions subjects learned to match a cue face, which was phase-scrambled into three levels of visibility, to unscrambled faces via feedback. In fMRI sessions, stimuli used as the cue faces in the training sessions were presented in an event-related fashion, jittering to different directions, and the subjects reported either their identities (Attend-to-Face) or their motion directions (Attend-to-Motion). The fMRI scans were alternated with the behavioral training sessions until the subjects' behavioral performance reached asymptote in all three levels. As expected, the accuracy of identifying scrambled faces improved with learning, while the magnitude of the FFA responses elicited by those stimuli increased monotonically. Second, the performance of identifying the least-scrambled faces was improved first, while the largest attentional effect (Attend-to-Face minus Attend-to-Motion) in the FFA was first observed on the same stimuli. Both behavioral improvement and attentional modulation were then gradually shifted to the most-scrambled faces. The coupling between behavioral and neural changes suggests that attention resources are allocated in a way to match learning progress. In conclusion, our data suggests that perceptual learning improves our ability of processing objects by increasing the sensitivity of object-selective cortical regions and efficiently allocating attention resources.

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WHAT IS SPECIAL ABOUT EXPERTISE? SELECTIVE NEURAL RESPONSE TO OBJECTS OF EXPERTISE IN EXPERTS' VENTRAL VISUAL PATHWAY *Assaf Harel[1], Yulia Golland[1], Rafael Malach[2], Department of Neurobiology, Shlomo Bentin[1]; [1]The Hebrew University of Jerusalem, Jerusalem, [2]Weitzman Institute of Science, Rehovot* – Expert object recognition occurs when one learns through experience to identify quickly and accurately individual exemplars of a homogenous class, a process putatively associated with qualitative changes in perceptual processing. Since expertise has been mainly invoked as an alternative to the domain-specificity of face processing (Gauthier and co-workers), most neuroimaging studies of expertise are limited to face-selective regions of the ventral visual pathway, especially the fusiform face area. In contrast, the present study examined what the spatial extent of the neural activity to objects of expertise is, and how early in the visual processing stream can expertise-related selectivity be found. Car experts and novices were presented with three object categories: cars, airplanes and faces, while being scanned in a 1.5T MRI scanner. A one-back memory task was performed by all subjects. Differential BOLD-fMRI responses were found in car experts in response to cars compared to car novices. Whereas in car novices, activation for cars was restricted to medio-occipital regions, car experts showed a more widespread preferential activation, distributed over a large portion of the occipital and temporal cortex. We suggest that expert object recognition modulates visual perception, and that this modulation is reflected by neural activity in the experts' visual cortex for objects in their domain of expertise, starting from early retinotopic areas of the visual stream to form a hypothesized distributed expert object recognition network

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SPECIFICITY OF VISUALLY EVOKED NEURAL RESPONSES TO LIVING AND NON-LIVING STIMULI *Meike Ramon, Denise Minnebusch, Boris Suchan, Irene Daum; Institute of Cognitive Neuroscience, Department Neuropsychology, Ruhr University Bochum, Bochum Germany* – Agnosia following brain injury may be linked to recognition of distinct semantic categories. Studies of prosopagnosia patients yielded ambiguous results with respect to co-morbid impairments of perception / recognition of object categories other tha human faces. To assess potential dissociations between different visual categories, an event related potential (ERP) study of visual perception was carried out using photographs of faces, man made and manipulable objects insects and animals (in sum 16 different object-categories). Category-specificity effects yielded differences at parieto-occipital electrode positions with a latency of 180 ms. Results demonstrate stimulus category specific differences in ERP components which may allow further insight in mental processing of visual stimuli.

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THE ROLE OF THEORY OF MIND IN AFFECTIVE PRIMING. *Tjeerd Jellema, Anna Pecchinenda; Hull University, Department of Psychology, United Kingdom* – The perception of (the affective valence of) a facial expression can automatically recruit attentional resources in the observer and may prioritize stimulus processing. Using concurrent presentation of static facial expressions and words of positive and negative value in an evaluative task, affective priming effects were observed due to the automatic processing of the distracter face (Pecchinenda et al., submitted). The present study investigated the mechanism underlying these effects and tested the hypothesis that they result from the automatic recruitment of the Theory of Mind (ToM) capacity (i.e. the attribution of mental states to others). Hereto we concurrently presented dynamic displays of posi-