

of it, or whether it is part of some more central attentional mechanism. The functional significance of the OR has thus been the source of some controversy, but there is now data to suggest that the OR is part of an anticipatory mechanism, where receptor sensitivity is enhanced. A recent study from our laboratory is described, where startle blink reflex magnitude, preceded by a prepulse, is modified depending upon the sensory facilitation of that prepulse as it is influenced by prior orienting. A general model for orienting, taking into account the organism's varying requirements for sensory and information processing enhancement, is presented. This model takes as its base a teleological perspective, moulded within the framework of modern cognitive science. This view is contrasted with other theoretical explanations of the OR.

#### TOPOGRAPHIC AND ERP ANALYSIS OF THE EEG DURING A READING TASK AMONG DYSNOMIC SUBJECTS

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A problem in rapid naming (dysnomia) is associated with the persistent reading problem (dyslexia). There is some evidence that children with dysnomia have poorer diagnosis in reading acquisition (Korhonen T., 1991; 1995).

The ERP recordings have revealed (Leppäsaari, 1995), that during an active condition (a word reading task) dysnomic subjects showed 1) more activity in the right centro-parietal areas at the 350–550 ms latency than normal subjects and 2) larger ERP amplitudes than normal subjects but not during a passive condition (watching colors). Based on the PET scanning Paulesu et al. (1996) have proposed that dyslexia is some kind of disconnection syndrome due to weak connectivity between anterior and posterior language areas.

In the present study the ERP's of the adolescent dysnomic subjects were analysed during color watching and word reading conditions in two different ways: using traditional ERP analysis and functional topographic analysis based on cross-correlations of potentials between different brain areas (Lindqvist, 1994). The results revealed two different kinds of asymmetries not usually found from the normal readers, viz, between lateral sides and between anterior and posterior parts of the brain.

#### MISMATCH NEGATIVITY IN CHRONIC ALCOHOLICS PRELIMINARY RESULTS

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The mismatch negativity (MMN) is an auditory ERP elicited by low probability deviant tones randomly inserted in a series

of repetitive tones, irrespective of the direction of attention. Thus, the MMN reflects automatic signal processing. This ERP component has been studied in some degenerative illness, such as Alzheimer's and Parkinson's diseases. The results reported by Pekkonen et al. (1994) showed normal MMN in Alzheimer disease when a short interstimulus-interval (ISI) was used. However, when a long ISI was used, the MMN was decreased suggesting a deficit in sensory memory in Alzheimer's disease. In Parkinson's disease, MMN was reduced in amplitude in patients with no clear signs of dementia (Pekkonen et al. 1995), in a condition using short ISIs. To date, there is not yet any literature about the possible impairment of MMN in chronic alcoholics. The MMN was recorded in 6 chronic alcoholics and 4 matched controls. All chronic alcoholics met DSM-III-R criteria and the explorations were made between one to three months after the withdrawal. Subjects listened passively to three blocks of 445 stimuli while they were watching silent TV movies. The standard stimulus was a tone of 1000 Hz with a probability of 85%. The deviant tone was 1100 Hz in frequency (15%). The inter-stimulus interval was of 750 ms. MMN was analysed in nine electrodes: F3, Fz, F4, C3, Cz, C4, P3, Pz, P4, referred to nose. Our preliminary results suggest that automatic stimulus-change is not impaired in chronic alcoholics. More patients are currently under exploration.

#### EFFECTS OF THE H<sub>1</sub>-RECEPTOR ANTAGONIST CHLORPHENIRAMINE ON THE MISMATCH NEGATIVITY

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It has been recently shown that attentive auditory target decision depends on a pre-attentive sensory memory system. This finding was based on a high positive correlation between reaction time to target sounds and the latency of the MMN, an event-related potential (ERP) elicited by deviant tones in a series of unattended homogenous stimulation. Thus, the recording of MMN might be useful in order to identify the possible causes of deficits in attentive target processing. In the present experiments, the side effects of chlorpheniramine, an H<sub>1</sub>-receptor antagonist commonly used in preparation for symptomatic treatment of coughs and colds, leading to a degree of sedation and impaired cognitive abilities, were studied by recording the MMN. Twenty healthy male subjects received either a single 4 mg dose of d-chlorpheniramine or a placebo, according a double-blind design. The subjects were instructed to read a book and to ignore random sequences of 90% standard (1000 Hz) and 10% deviant (1100 Hz) tones, presented with stimulus-onset asynchrony (SOA) of 480 ms. The exogenous N1 and P2 components were similar in the two groups, the MMN being decreased at its ending phase by 1.3