

M. MATARÓ, M.A. POCA, M. MATARIN, J. SAHUQUILLO, F. ARIKAN, & C. JUNQUÉ. Dichotic Listening Performance in Patients With Normal Pressure Hydrocephalus.

Normal pressure hydrocephalus (NPH) is a deteriorating condition characterized by abnormal gait, dementia and/or sphincter dysfunction associated to ventricular dilatation. In addition to ventricular dilatation other cerebral abnormalities have been found associated with hydrocephalus including the morphology and magnetic resonance imaging signal of the corpus callosum. The aim of the present study is to evaluate corpus callosum functioning in a group of NPH patients using a dichotic listening task and to compare it with a group of patients with Alzheimer disease and control subjects. Twenty-three NPH patients, 30 patients with Alzheimer disease and 30 aged controls were included in the study. Of the 23 NPH patients, 19 patients presented an idiopathic hydrocephalus and in 4 it was of secondary type. NPH was clearly associated with left ear extinction. Statistically significant differences were found between NPH patients and patients with Alzheimer disease and control subjects. No significant differences were found between patients with Alzheimer disease and controls. Sixty-one percent of the patients with NPH exhibited left ear suppression, compared to 13% of the patients with Alzheimer disease and 17% of the control subjects. These results suggest corpus callosum dysfunction associated to hydrocephalus.

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I. PAVÃO MARTINS, C. LOURERO, B. DIAS, S. RODRIGUES, T. FERNANDES, & EPILEPSY GROUP OF HOSPITAL DE SANTA MARIA. The Positive Wada Test: Where Are the Universal Criteria?

Background: There are no universal criteria for positive Wada memory test (PWMT), namely after injection of the PCA. Objectives: (1) to propose a criterion for PWMT based on the comparison of the patient's performance on the pre-test (training) versus test; (2) to determine and compare the difficulty of training and test in a control group (chronic epileptics); (3) to test the goodness of the criteria based on surgery outcome. *Methods:* Two versions of the test (training and test) were applied to 40 chronic epileptics (mean = 38.38 years old). A crossover design study was used to control learning and interference effects. No difference was found between the two versions ($t = -0.163, p = .871$). The test was also applied to 9 patients, during PCA amital injection, before temporal lobe surgery (8 left, 1 right sided lesion). *Results:* Two patients developed a memory decline following surgery. Several scoring systems and cut off criteria were tested to evaluate the efficacy of the amital results. The majority held low sensibility and specificity. *Discussion:* Clinical report was a better criterion than absolute cut off, which can be explained by an aphasia development, during amital test in some patients. It is necessary to review the criterion of different centres for considering PWT, to define the best criteria. Correspondence: *I. Pavão Martins, Language Research Laboratory, Epilepsy Group of Hospital de Santa Maria, Centro de Estudos Egas Moniz, Faculdade de Medicina de Lisboa, Avenida Prof. Egas Moniz, 1649-028 Lisboa, Portugal. E-mail: labling@mail.telepac.pt*

K. YOSHIKAZI, K. KATO, M. FUTAMURA, A. KOBAYASHI, & T. KAWAI. The Effects of Task Complexity and Sex on the Benefits of Bihemispheric Processing.

The purpose of this study was to examine the effect of task complexity and sex on the bihemispheric processing using the Posner-type matching paradigm. In Experiment 1, 36 right-handed students were given two tasks. One was that a pair of Japanese Kana scripts which consisted of the same type of phonograms was presented to the unilateral and bilateral visual-fields, so this task corresponded to the Physical Identity task (PI). The other was the same as PI task, except that a pair of Kana scripts consisted of the different types of phonograms. This task corresponded to the Name Identity task (NI). In terms of task complexity, NI task was higher than the PI task. The results showed that while a bilateral visual-fields advantage (BFA) showed up in NI task, it did not in PI. Interestingly, a BFA for female was larger than that for male in the NI task, whereas such a sex

difference in terms of BFA was not obtained in the PI task. In Experiment 2, 32 right-handed students were given two tasks. The tasks and procedures in Experiment 2 were the same as Experiment 1, except that digits printed in Arabic and Kanji numerals were used as targets. The results were consistent with the results obtained in Experiment 1. These results suggested that the benefits of bihemispheric processing enhanced as task complexity increased and that it depended on sex. One possible explanation for such a sex difference could be due to the difference of the size of corpus callosum.

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N. CHERBUIN, J. BUCHHOLZ, & C. BRINKMAN. Information Integration Between the Cerebral Hemispheres in Normals and Dyslexics.

In normals, past research has shown that under divided visual field conditions, specific tasks may be processed more efficiently when part of the information necessary to complete the task is projected to each visual field separately (requiring hemispheric interaction) rather than when all necessary information is projected to a single visual field. This is surprising given that when information is divided across visual fields, task resolution involves the extra "cost" of transferring information across the corpus callosum. We investigated the relationship between interhemispheric transfer time (IHTT) and hemispheric interaction between the left and right cerebral hemispheres. We hypothesised that individuals with faster interhemispheric transfer may benefit more from hemispheric interactions than those with slower transfer. Normal individuals ($n = 60$) performed on two tasks: a Poffenberger task, assessing IHTT, and a divided visual field letter-matching task, assessing hemispheric interaction. Results suggest that individuals with faster interhemispheric transfer times show a greater degree of interhemispheric interaction than individuals with slower transfer times. To our knowledge, this is the first time that two separate behavioural measures of IHTT and hemispheric interaction have been shown to be directly and highly significantly correlated ($r = .47$). Since dyslexics have been shown to have interhemispheric transfer deficits, it was expected that they would also present with hemispheric interaction deficits. Research with dyslexic subjects is on going, but early trends seem to confirm lower hemispheric interaction performance. Results from normal and dyslexic subjects will be presented.

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H. HAETTIG, K. BURCKHARDT, T. BENGNER, & H.-J. MEENCKE. Differential Effects of Temporal-Cortical and Hippocampal Lesions on a Fused-Words Dichotic Listening Test.

Objective: In fused-words (FW) dichotic listening (DL) tests two rhyming monosyllable words are presented simultaneously, each of them to one ear (Fernandes & Smith, 2000; Hattig & Beier, 2000; Zatorre, 1989). There is still a controversy whether this type of DL test is free from contralateral ear suppression (lesion effect). We studied whether a lesion, which involves temporal neocortex affects the DL outcome more than a pure hippocampal lesion. *Methods:* From the Berlin Epilepsy Center the data of $N = 82$ patients with refractory temporal lobe epilepsies were categorized whether their lesion involved the cortex (temporo-lateral, $N = 30$) or the hippocampus only (temporo-mesial, $N = 52$). Before surgery all patients passed an extended neuro-psychological evaluation, a FW-DL test and a standardized MRI (coronal, sagittal and temporal planes with T1, T2, IR and FLAIR images). *Results:* In the temporo-lateral group we observed a significant effect of contralateral ear suppression on answers from the right ear (REP) in left-sided lesions ($p = .005$). The mean ear values (ear points, left = LEP vs. right = REP) for the temporo-lateral group was for left-side lesions LEP = 7.73 versus REP = 9.93 and for right-side lesions LEP = 5.20 versus REP = 18.93. For the temporo-mesial group the values were: left-side lesion: LEP = 5.21 versus REP = 17.47, right-side lesion LEP = 3.00 versus REP = 17.47. *Discussion:* The involvement of neocortex in temporal lesions seem to play a crucial role for contralateral ear