

significant VIQ > PIQ discrepancy, Reading > Math discrepancy, and bilateral fine-motor deficits. Forty percent of the FEAT group and 1% of the NORM group met minimal criteria. Guided by Rourke's classification criteria for NLD, neuropsychological measures will be subjected to analyses using MAXCOV, MAMBAC, and other procedures to explore the taxometric properties of these criteria. Such investigations have important implications for future theoretical explanations and clinical applications of the syndrome of NLD.

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**Y. KANG, J. CHIN, D.W. SEO, & S.B. HONG. Re-examination of the Crowding Hypothesis in LTLE With Right-Hemisphere Language.**

There has been a controversy about the cognitive effects of the pathological "shifting" in language dominance to the right hemisphere. Strauss et al. found that the pathological shifting impaired the development of other "right hemisphere" functions such as non-verbal, visuospatial ability (the crowding hypothesis). However, Rausch et al. reported that left temporal lobe epilepsy (LTLE) with right hemisphere language dominance did not show a relative decrease in visual-spatial functions. The present study was conducted to re-examine the crowding hypothesis. Forty-four LTLE patients were administered the intracarotid amobarbital procedure (IAP) and a comprehensive neuropsychological evaluation prior to the epileptic surgery. The IAP revealed that in 37 patients, speech was exclusively mediated by the left hemisphere (LHLD-LTLE) and in 7 patients, speech was in the right hemisphere (RHLD-LTLE). Four of the RHLD-LTLE were right-handed, and 3 of them were left-handed. Five out of 7 RHLD-LTLE reported that their first clinical event (e.g., right hemiparesis due to unknown reason) occurred prior to the age of 2 years. The RHLD-LTLE performed as well as the LHLD-LTLE on most neuropsychological measures including intelligence, language, visuospatial function, verbal/visual memory, attention, and fine motor coordination. However, the RHLD-LTLE performed significantly worse than the LHLD-LTLE on some measures of frontal/executive functions that were assumed to be related with the "right" prefrontal cortex. In sum, although no difference was found in visuospatial functions between the RHLD and the LHLD, the present results that found a relative decrease of right frontal lobe functioning in the RHLD-LTLE still support the crowding hypothesis that Strauss et al. argued.

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**I. PAVÃO MARTINS, A. CASTRO-CALDAS, B.D. TOWNES, T. BENTON, G. FERREIRA, P. RODRIGUES, S. MARQUES, G. ROSEBAUM, T. DE ROUEN, & J. LEITÃO. Age and Sex Differences in Neurobehavioral Performance: A Study of Portuguese Elementary School Children.**

*Objectives:* The goals of this study were to develop normative data on a set of neurobehavioral tests for Portuguese elementary school children. *Method:* Subjects were 503 healthy children (228 F, 275 M), 8.0 to 11.9 years of age who participated in a dental study (Casa Pia Children's Amalgam Trial). Children were administered an intelligence test (C-TONI), and tests of attention, memory, motor/visual motor and executive abilities. Means and standard deviations for each test variable were computed separately for ages 8.0 to 8.11 ( $n = 73$ ), 9.0 to 9.11 ( $n = 143$ ), 10.0 to 10.9 ( $n = 203$ ) and 11.0 to 11.9 ( $n = 84$ ). *Results:* All tests were sensitive to developmental effects showing performance improvement with age. Girls performed better in rote verbal learning, psychomotor speed and speed of information processing and made fewer errors on a test of cognitive flexibility. Boys had higher scores on tests of visual learning, visual memory and fine motor speed and coordination. This is in accordance with the usual developmental differences in gender. Nonverbal IQ had a significant impact on all tests of memory, some attention tests and a visuomotor matching (requiring problem solving) test but not on tests measuring motor speed and coordination. Compared to USA norms, children had lower test scores on most measures (ranging from 0.5 to 1 SD below mean for

American children), in all age groups, except for rote verbal memory tests. This was interpreted as a result of educational and socioeconomic differences.

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**E.S. DMITRIEVA & V.YA. GELMAN. The Developmental Aspects of Children's Memory for Emotional Speech Component.**

Auditory sensory memory is a first stage in auditory perception and is essential for recognition of speech stimuli. In behavioral and electrophysiological studies the maturational changes in the duration of auditory sensory memory were found out. Here, we investigated the peculiarities of sensory memory using behavioral measures of auditory processing of emotional speech component in children of different ages (7-17 years old). The stimuli used as actual test items were the fragments of different duration (0.5-3.0 s) of a sentence spoken in positive, negative and neutral emotional tones of voice. The 24 test signals were presented at random either on right or left ear of each subject through the headphones with contralateral white noise. Subjects answered by pressing the appropriate button of the three-choice answer console. At stimulus duration of 0.5 s the accuracy of recognition was reduced and the time of recognition increased as compared to the other durations of the stimuli for all children's age groups. At stimulus duration of 3 s children answered before the end of the test signal and exhibited the maximal accuracy of recognition. This allows to suppose that speech signals of 2-s duration and less are accumulated in echoic memory for further recognition of emotional component. The improvement of emotions recognition and the reduction of the reaction time were observed in age course through the maturational changes in the duration of auditory sensory memory were not found out.

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**T. FERNANDES, R.L. SILVA, C. LOUREIRO, & I. PAVÃO MARTINS. Development in the Absence of the Prefrontal Cortex: A Case Report.**

*Background:* There are few cases of early frontal lesions studied in detail. It is not clear if prefrontal cortex has a general modulatory influence upon neuropsychological development or a circumscribed role upon executive functions. *Case report:* E.F. a 16-year-old girl, underwent a right prefrontal lobotomy at 2.5 months (following a brain abscess). Her psychomotor and language development were within the normal range. She managed to proceed up to the 6th grade (at age 15). *Neuropsychological assessment:* E.F. scores on WAIS VIQ = 69, PIQ = 71, FSIQ = 71. E.F. performed within normal range in tests of language, reading writing, elementary calculation, verbal learning (WMS) and motor initiation and control (Luria hand-motor sequences and auditory go-no-go). On executive functions tasks E.F. showed a very poor performance. In Verbal Fluency Tasks, E.F. presented a low global score, and a reduced number of switching, although she produced a large mean cluster size in all tasks. This pattern is usually found in patients with frontal lesions and is consistent with the hypothesis proposed by Troyer. Her performance on proverb interpretation and tests of abstraction was also poor. She performed below normal range on tests of sustained attention test, short-term memory and episodic memory tests (CVLT). *Conclusions:* Further to a low IQ, E.F. showed a specific impairment on executive function tests, with normal performance on other cognitive domains. This performance pattern poses limitations to the hypothesis suggesting a fundamental role of the frontal lobes in the organization of other cognitive domains.

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**R. WEINSTEIN & J. WEINSTEIN. Consequences of Child Neglect on Brain Development: A Case Study.**

Current understanding of brain development demonstrates the need for proper nutrition and stimulation in order to ensure proper and healthy brain development. Neuronal plasticity allows for some recovery of func-