Vendrell P et al. Abnormal orbitofrontal development due to prematurity. **Neurology** Nov (2 of 2) 2006;67:1818-1822). (Reprints: Dr Carme Junque, Department of Psychiatry, University of Barcelona, C/ Casanova, 143, 08036 Barcelona, Spain).

COMMENT. The impaired development of the secondary orbital sulci is consistent with the premature birth before 32 weeks, and before these sulci have formed. In contrast, the primary sulci appear at 16 weeks' gestation and are well formed at 25 weeks. The sulcal abnormality appears to correlate with gray-matter volume reduction. The authors conclude that the orbitofrontal sulcal abnormality is a sequel of premature birth or neonatal complications. Special MR techniques are proving useful in detecting subtle structural cerebral defects that might explain cognitive and behavioral developmental deficits.

LEARNING AND LANGUAGE DISORDERS

MRI ANATOMICAL CORRELATES OF READING AND LANGUAGE DEFICITS

Neuroanatomical correlates of developmental dyslexia (DD), defined by isolated reading deficits, and specific language impairment (SLI), defined by poor receptive and expressive language skills, were examined using MR imaging in a heterogeneous sample of 14 boys and 8 girls (11-16 yers of age) with learning disabilities, in a study at University of Florida; Georgetown University, Washington, DC; and other centers. Using a quantitative anatomical risk index, children with smaller and symmetrical brain structures (negative risk indices) had S severe comprehension impairments typical of SLI, whereas those with larger, asymmetrical brain structures (positive risk indices) had DD (reading deficit with preserved comprehension). Children with normal anatomy and near zero risk indices thad the best learning performance. Speed of rapid automatic naming was not related to the anatomical risk index but was predicted by variation in frontal lobe and cerebellar anatomic measures. Comprehension deficits distinguish SLI from DD. (Leonard C, Eckert M, Given B, Virginia B, Eden G. Individual differences in anatomy predict reading and oral language impairments in children. **Brain** Dec 2006;129:3329-3342). (Respond: Christiana Leonard, Department of Neuroscience, University of Florida, PO Box 100244, Gainesville, FL 32605).

COMMENT. Children with negative anatomical risk indices (smaller symmetrical brain structures including Heschl's gyri) have severe deficits in reading and language function, including comprehension, typical of SLI, whereas children with positive anatomical risk indices (larger cerebral volume and Heschl's gyri, more asymmetrical brain structures, including planum temporale and cerebellar anterior lobe) have fewer learning deficits, with relative sparing of receptive language and reading comprehension, typical of DD. Further research with larger samples is needed to confirm the correlation of the anatomical risk index with reading and language deficits, and the value of MRI studies in predicting learning impairments and need for academic accommodations.