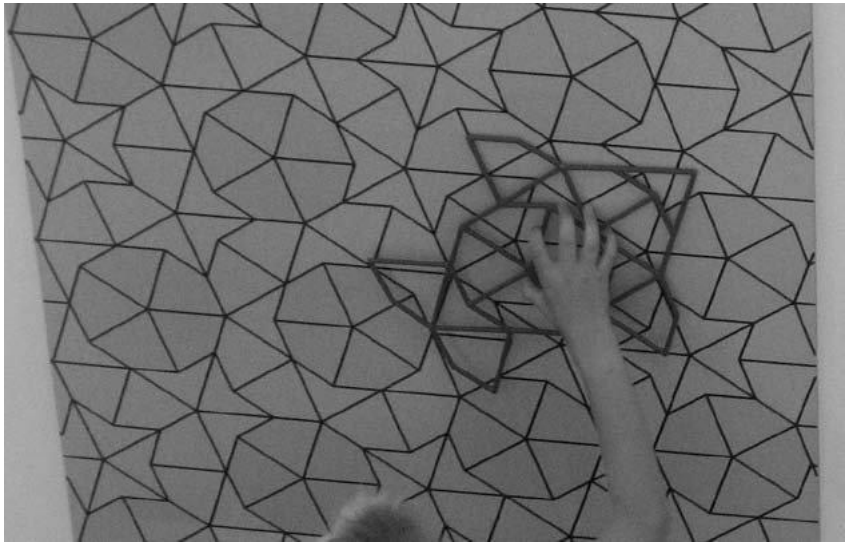

David B. Brown, James E. Smith 0003

Dynamic Portfolio Optimization with Transaction Costs: Heuristics and Dual Bounds.

The objective of this study is to assess the relationship between brain volumes at term equivalent age and neuropsychological functions at 5 years of age in very low birth weight (VLBW) children, and to compare the results from a neuropsychological assessment and a parental questionnaire at 5 years of age. The study group included a regional cohort of 97 VLBW children and a control group of 161 children born at term. At term equivalent age, brain magnetic resonance imaging (MRI) was performed on the VLBW children, and analysed for total and regional brain volumes. At 5 years of age, a psychologist assessed the neuropsychological performance with NEPSY II, and parents completed the Five to fifteen (FTF) questionnaire on development and behaviour. The results of the control group were used to give the age-specific reference values. No significant associations were found between the brain volumes and the NEPSY II domains. As for the FTF, significant associations were found between a smaller total brain tissue volume and poorer executive functions, between a smaller cerebellar volume and both poorer executive functions and motor skills, and, surprisingly, between a larger volume of brainstem and poorer language functions. Even after adjustment for total brain tissue volume, the two associations between the cerebellar volume and the FTF domains remained borderline significant (P = 0.05). The NEPSY II domains Executive Functioning, Language and Motor Skills were significantly associated with the corresponding FTF domains. In conclusion, altered brain volumes at term equivalent age appear to affect development still at 5 years of age. The FTF seems to be a good instrument when used in combination with other neuropsychological assessment.