Developmental dyslexia is a highly prevalent and specific disorder of reading acquisition characterised by impaired reading fluency and comprehension. We have previously identified fMRI- and ERP-based neural markers of impaired sentence reading in dyslexia that indicated both deviant basic word processing and deviant semantic incongruency processing. However, it remained unclear how specific these impairments are for dyslexia, as they occurred when children with dyslexia (DYS) were compared to chronological age-matched controls (CA) who also differ in the amount of reading experience. Adding a younger control group at a similar reading level (RL) as the dyslexic group, we examined here which of these markers would be specific for dyslexia despite matched performance, and which would resemble a developmental delay. Both the RL group and the DYS group showed a similar reversal of incongruency effects in the inferior parietal region (fMRI data) and similarly reduced incongruency effects around 400 ms (ERP data) compared to the CA group, suggesting that the semantic impairment in dyslexia resembles a developmental delay. Furthermore, the DYS group showed reduced sentence reading-related activation in the inferior parietal cortex in the fMRI data, and at around 100 ms (trend) and 400 ms in the ERP data when compared to both CA and RL groups, suggesting
dyslexia-specific deficits in basic word processing during sentence reading. Low reading skills due to young age and due to dyslexia-specific word processing deficits thus reflect different pathways which impair semantic processing in similar ways.