Title: Assessing Spatial Cognition in Dyslexia and Developmental Language Disorders/ Αξιολογώντας την Αντίληψη του Χώρου στη Δυσλεξία και τις Γλωσσικές Διαταραχές

The evaluation and diagnosis of cognitive deficits in neurodevelopmental disorders has been a challenge. Recent research has pointed out a common cognitive substrate among neurodevelopmental disorders, which might explain the language deficits that dyslexia and developmental language disorders (DLD) exhibit (Bühler, Perovic, & Pouscoulous, 2018; Davies, Andrés-roqueta, & Norbury, 2016; Ewing & Parvez, 2012; Kirby, Kim, & Silvestri, 2014; Ramus, Marshall, Rosen, & Van Der Lely, 2013; Talli, Sprenger-Charolles, & Stavrakaki, 2016). For example, the normal range of non-verbal IQ has been excluded from the DSM-5 (2013) for the diagnosis of DLD. Consequently DLD may be accompanied by non-verbal skills below the normal, without qualifying for intellectual disability (Bishop, 2017; Norbury et al., 2016). Furthermore, DSM-5 (2013) makes explicit reference to cognitive deficits in cases of dyslexia, while describing them as "a neurodevelopmental disorder with a biological origin that is the basis for abnormalities at a cognitive level" (2013, p. 68). Spatial cognition is a fundamental brain function, including pre-lingual and essential for survival skills, such as spatial awareness and navigation. It is possible that dyslexia and language disorder might be correlated with spatial cognition deficits, remaining so far undetected due to the scarcity of spatial cognition assessment tools. A questionnaire of verbal and non-verbal spatial tasks has been developed in order to assess spatial cognition (Tselika, in progress). The spatial tasks include the use of image schemata IN, ON, UNDER and NEXT TO, which reflect the embodied experience of space by humans. The aim of the research is to examine whether the image schemata can be a valid clinical marker for evaluating the developmental course of children and to investigate if spatial cognitive deficits are comorbid with dyslexia and language disorders. The questionnaire has been standardized with adults and typically developing children and the results show that the mean errors in spatial tasks and in image schemata differ significantly across ages, across educational levels and between genders. The spatial tasks test will be presented, along with the outcomes of its standardization process with the typical population, which seems to qualify the image schemata as a sensitive clinical marker for detecting any cognitive deficits related to the conception of space.

Key words: neurodevelopmental disorders, dyslexia, developmental language disorders, cognitive linguistics, psycholinguistics

Field relevant to the congress: Assessment Tool for Developmental Dyslexia and Developmental Language Disorders

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