Inter-letter spacing and eye movements in typical developing readers and dyslexics.
Stéphanie Bellocchi, Mathilde Muneaux, A. Huaulme, Marianne´ Jover, Stéphanie Ducrot

To cite this version:
Stéphanie Bellocchi, Mathilde Muneaux, A. Huaulme, Marianne´ Jover, Stéphanie Ducrot. Inter-letter spacing and eye movements in typical developing readers and dyslexics.. Learning Written Language: Diversity of languages, Uniqueness of disorders, Dec 2014, Strasbourg, France. Université de Strasbourg, 2014. hal-01507658

HAL Id: hal-01507658
https://hal.science/hal-01507658
Submitted on 1 Feb 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
Exploring the link between visual perception, visual-motor integration and reading: the clinical usefulness of battery DTVP-2

S. Bellocchi 1, M. Muneaux 2, A. Huau 1, M. Jover 3 & S. Ducrot 2

1Epsilon Research Unit EA 4556, University of Montpellier & University Paul Valéry, Montpellier, France
2Laboratoire Parole et Langage, UMR 7309, CNRS & Aix-Marseille University, Aix en Provence, France
3Centre PsyCLE EA 3273, Aix-Marseille University, Aix en Provence, France

corresponding author: stephanie.bellocchi@univ-montp3.fr

Reading is known to be primarily a linguistic task and a large body of data shows that there are many linguistic factors that affect word processing (i.e. phonological awareness). However, to successfully decode written words children also need to develop good visual perception skills. Very recent literature shows that another skill seems to be also implicated in reading acquisition: motor abilities. That is, gross motor skills are reported to have significant correlations with reading (Knight & Rizzuto, 1993) and Longcamp, Zerbato-Poudou and Velay (2005) observed that handwriting training gave rise to higher letter recognition performances than typing training. Furthermore, dyslexia is frequently associated with visuo-attentional and motor disorders (e.g.: Bellocchi et al., 2013; Jover et al., 2013). Studying both the development of normal or deviant reading abilities and its predictors would allow to develop teaching or remedial methods and identify children at risk for later reading difficulty.

The purpose of this study was to evaluate a pre-existing battery to test visual perception and visual-motor integration (DTVP-2, Hammill, Pearson & Voress, 1993).

1) First we wanted to test how visual perception and visual-motor integration assessed in Kindergarten predict reading outcomes in 1st Grade in a group of 36 typical developing children.

2) Secondly, we aimed at evaluate if these abilities could be seen as clinical markers in a group of dyslexic children.

Study 1

Methods

36 children (chr. age: mean 82.17; SD= 3.86 months)

Participants

Materials and procedure

2 times assessment:

Time 0 (Kindergarten) Time 1 (May, 1st grade)

DTVP - 2

Reading - Alouette-R

(Lefavrais,2005)

DTVP-2 subtests

Motor- Reduced Visual Perception MRVP

Visual Motor Integration VM

General Visual Perception GVP

Position in Space

Visual Closure

Form Constancy

Copying

Eye-Hand Coordination

Visual Motor Speed

Spatial Relations

Deficit

Results

Predictions

Multiple linear regression.

Study 2

Methods

20 dyslexic children (chr. age: mean 114.3; SD= 11.3 months; lexical age: mean = 84.7; SD= 7.3)

20 CA controls (chr. age: mean 114.85; SD= 11.6 months; lexical age: mean = 123.2; SD= 7.3)

20 RL controls (chr. age: mean 83.3; SD= 5.8 months; lexical age: mean = 84.8; SD= 4.5)

Materials

Reading Assessment : Alouette-R


Discussion

Main results showed that only the visual-motor integration subcomponent predicts reading outcomes one year later, in line with recent studies (e.g.: Sons & Mesells, 2006; Longcamp, Lagarrigue & Velay, 2010).

Furthermore, dyslexics showed lower visual perception and visual-motor integration abilities compared to normal readers. This last result is discussed taking into account the co-occurrence between dyslexia and other neurodevelopmental disorders.

References