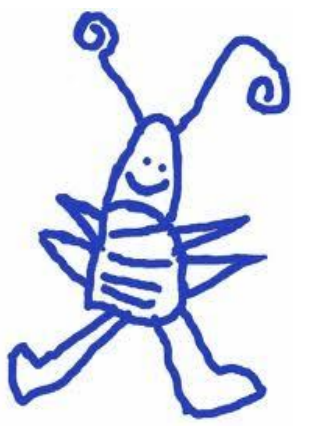


Spatial location skills in Cerebral Palsied children: How the presentation can influence children performances?



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Introduction

Spatial skills are requested for a large number of school learning and everyday life activities. These processes are known to be particularly vulnerable in cerebral palsied children who were found to be impaired in many visuo-spatial tasks such as pictures copy, visuo-spatial memory, construction with blocks, orientation, position in space and topology. However, the nature of their visuo-spatial deficits is still poorly specified. This study focus on the development of spatial location processes in Cerebral Palsied children (CP).

Aims

The BEVPS battery, especially elaborated for CP children (simplified presentation and responses modes), allows the assessment of visual perceptual and basic visuo-spatial skills.

In this study, we assessed and compared the ability to process the position of elements in space in typically developing (TD) and CP children.

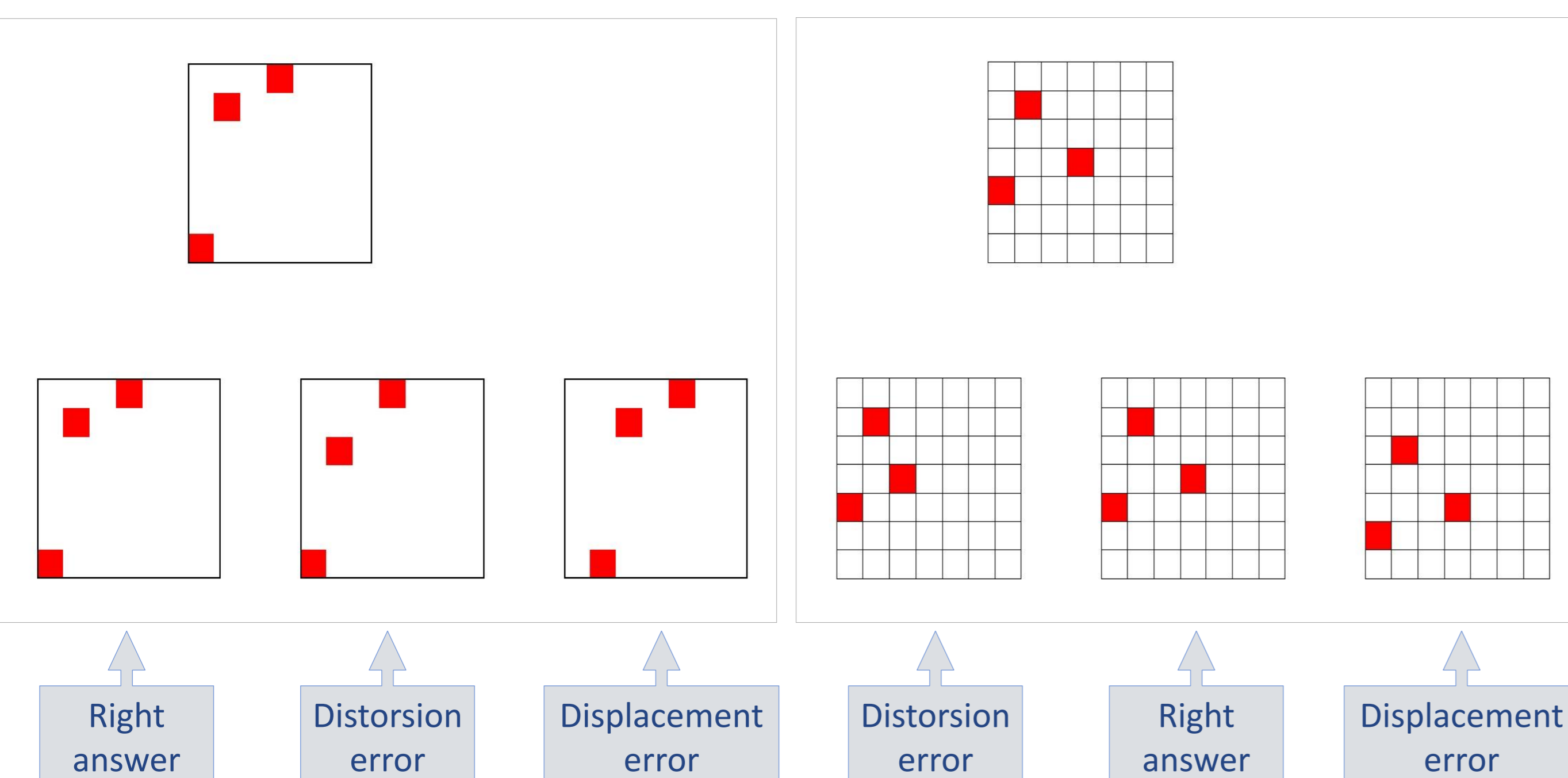
Methods

Participants:

103 CP children between 5 and 14 years old were individually matched to TD children on chronological age (± 1 month)

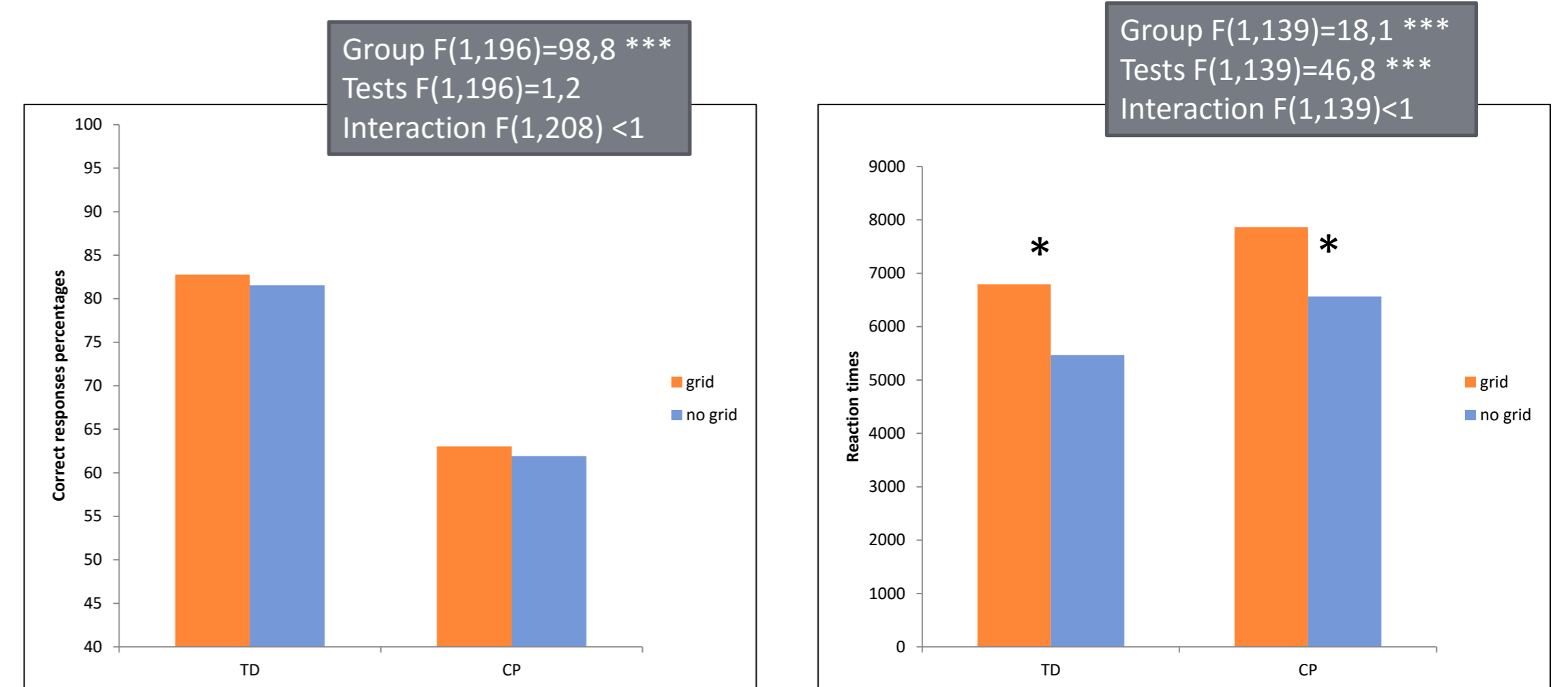
Tasks:

- Spatial location of the element in a box (with and without grid)
- Matching of a model (a blank matrix with 1 to 3 filled cells) with one of the 3 response possibilities
- The size of the matrix (16,25,36 or 49 cells), the presence of a grid and the position of the filled cells were manipulated.

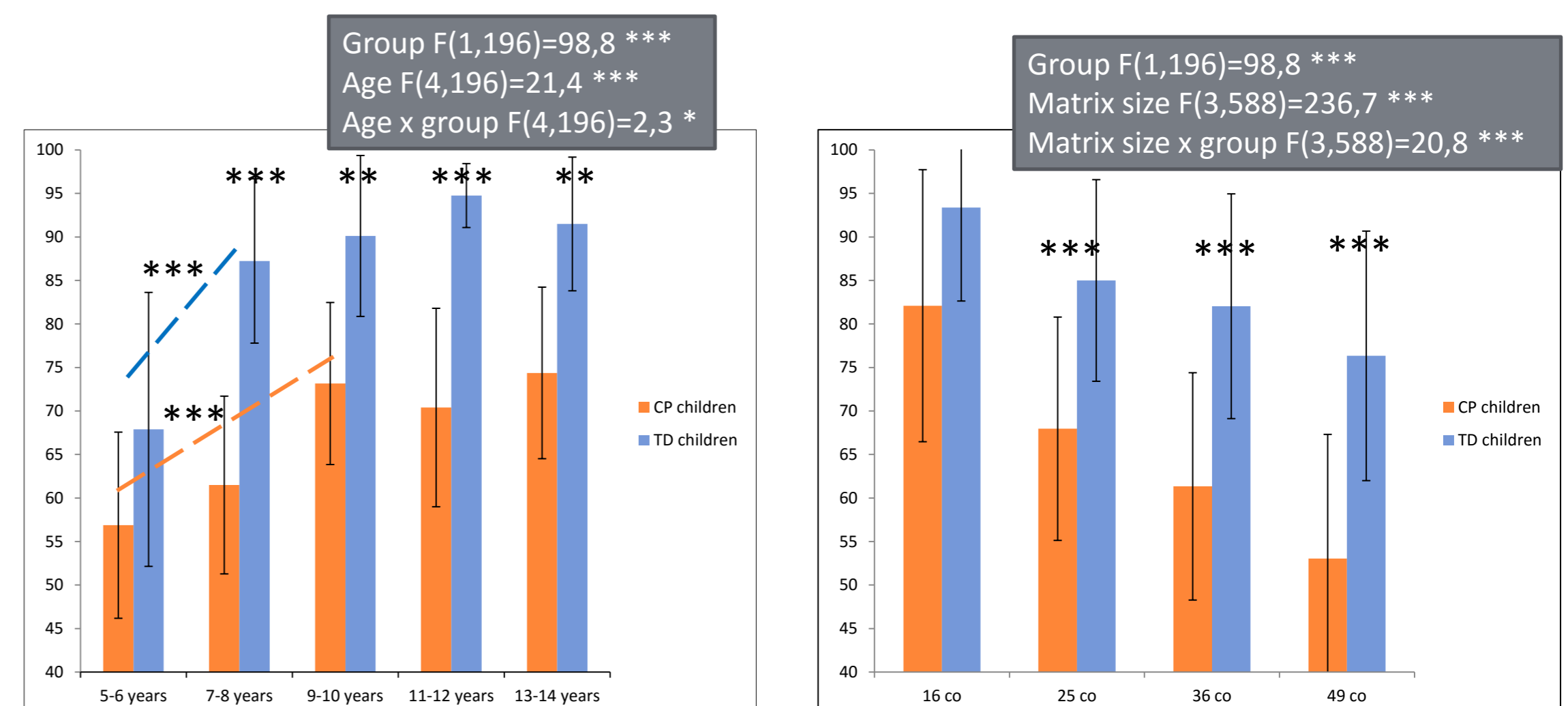


Results

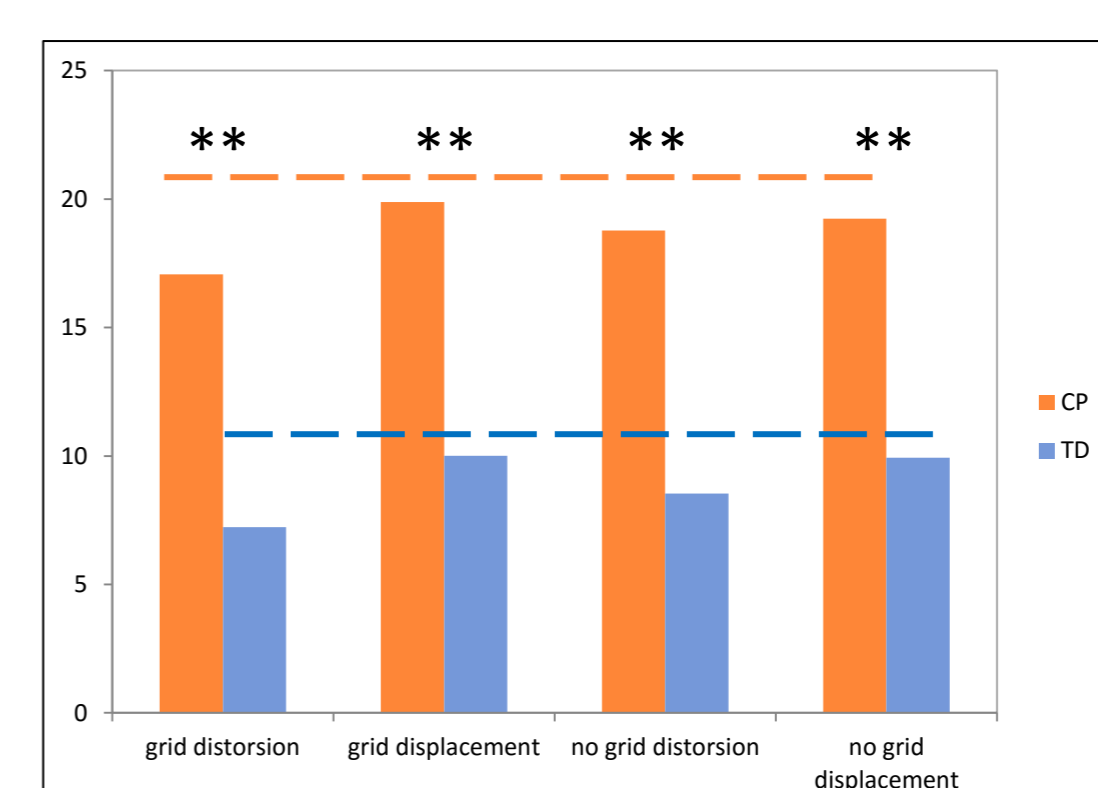
➤ Effects of the presence of a grid on reaction times but not on correct responses rates



➤ Effects of the matrix size on correct responses rate and interaction with groups



➤ Errors repartition: distorsion vs displacement



*p 0,05
**p 0,01
***p 0,001

DISCUSSION

- ✓ The grid has no effect on accuracy but significantly slows down the response times in both children groups
 - ✓ No difference on reaction times between TD and CP children
 - ✓ The difference between groups increase with the matrix size
 - ✓ From 7 years old and from 25 cells' matrix, CP children showed lower performances than TD children in terms of correct responses rate.
 - ✓ The difference between groups increases with age :
 - No difference between groups at 5-6 years
 - Spatial processing development continues up to 10 years in CP children while it reached maturity at 8 years-old in TD children.
 - ✓ No difference between groups on the 2 types of errors
- ➔ **Spatial processing development significantly delayed**
➔ **No atypical profile of performances**