Magnocellular Deficiency: A Possible Explanation for Inefficient Attention Resolution
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What We Want to Learn
• How visual attention deficiencies influence developmental dyslexia (DD). This study will associate ineffective magnocellular (M) processing with poor Attention Resolution efficiency.

What We Already Know
• The dominant theory of DD is the Phonological (P) deficit theory.
• DD may be caused by an M deficiency.
• The M pathway focuses attention (Facoetti et al., 2000).

Reasons for Research
• P interventions are unhelpful for some (Gori & Facoetti 2015).
• Identifying DD at the pre-reader stage.
• Early intervention programs.
• Furthering the understanding of DD.

Task Descriptions
The Navon Task:
• Large letters (global) are made up of smaller letters (local).
• Participants indicate if an H or O was present in a trial (Navon, 1977).

The VS-18 Task:
• The participants will specify the location of an orange triangle (Ferretti et al., 2008).
• The triangle could be located on the left, right or middle of the screen.

The Tilt Discrimination Task:
• Participants must identify the tilt of the target gabor as left or right.
• The distractor gabors can be crowded or spaced from the target gabor (Cassim, 2014).

Expected Results & Future Directions
Hypotheses
1. The Navon Task: Good readers (GR) will experience a global precedence effect. Poor Readers (PR) will not. (Franceschini’s et al., 2017). I expect a larger absolute timing difference between the global and local level for PR.

2. The VS-18: PR will have an atypical scanning pattern, GR will exhibit a usual scanning pattern (Ferretti’s et al., 2008).

3. The Tilt Discrimination Task: PR will experience excessive visual crowding while GR will not (Cassim’s et al., 2014).

• Future studies will correlate the findings above with known measures of M processing and AR efficiency to determine if the M pathway can influence AR efficiency.

References
Stoet, G. (2018, November 5). Navon Figure [Psytoolkit Stimuli].https://www.psytoolkit.org/experiment-library/navon.html