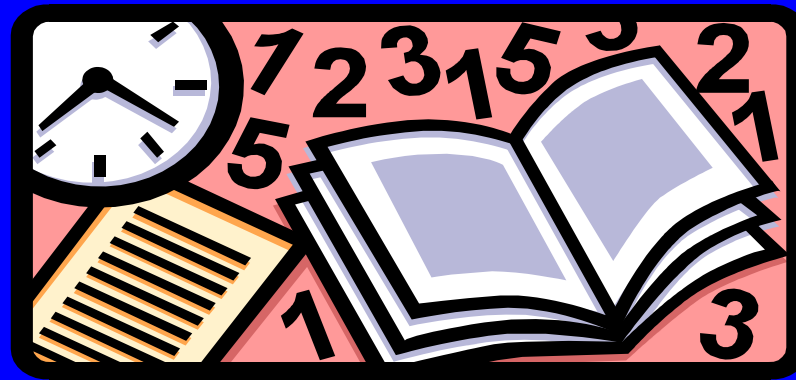


The visual problems of children and their effects on education



by

Geoff Shayler BSc FBCO FCSO

Press space bar to move between
slides

Restricted functional visual fields (awareness of peripheral vision)

The
basis
of many visual
processing problems??



Visual field problems
in
children

As many as 1 in 4 children are unable to adequately process their peripheral vision *at a conscious level*

Consider this picture as a view in school for a “normal child”

A normal view of kids at play



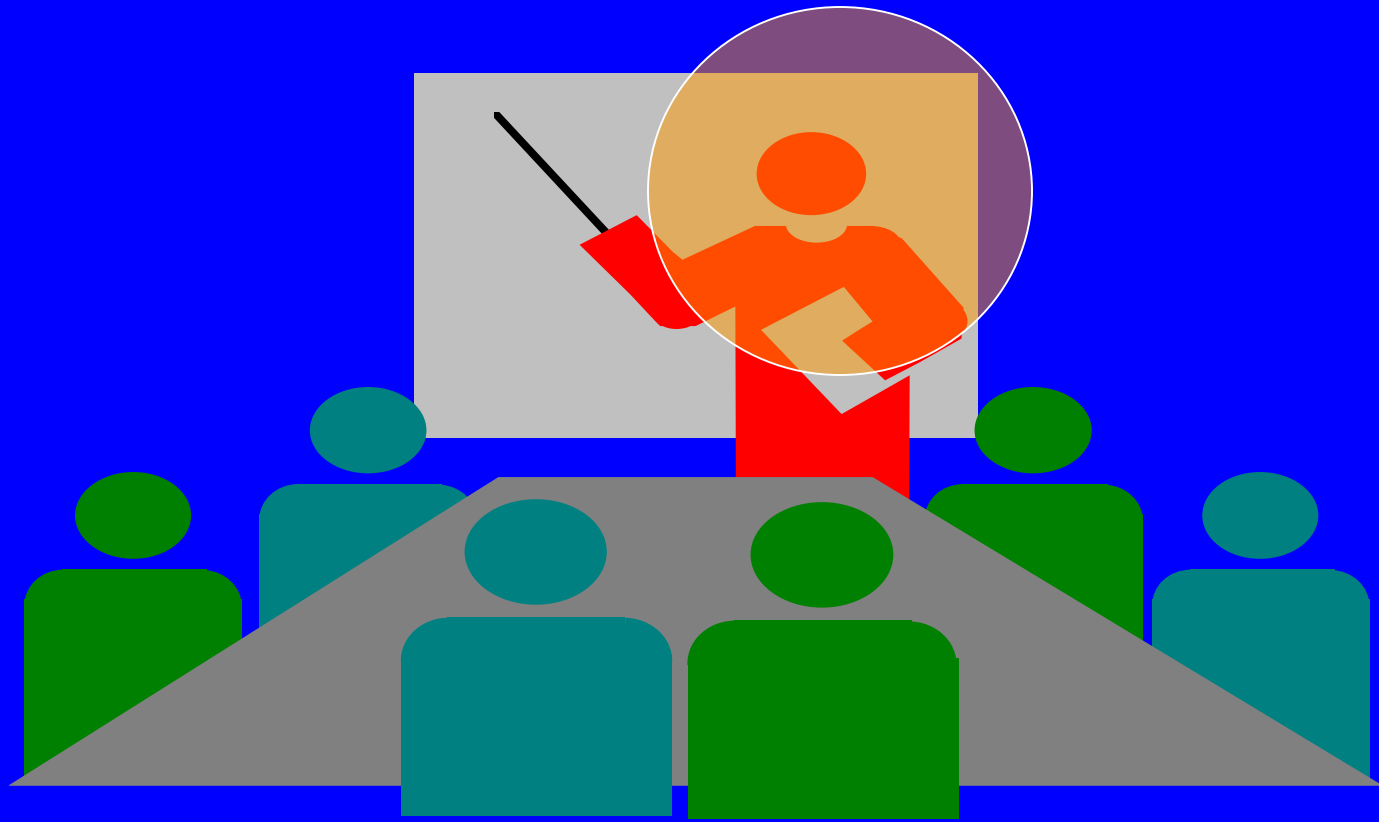
Then this is the same view for a child with a restricted field of vision !



Without head or eye movements he has little understanding of what is happening in front of him

What is this boy looking at?

Is anyone with him?



In school, if a student is only seeing this small area (without head or eye movement), consider the amount of information he is actually taking on board *or failing to “see”*

What is the teacher pointing at???

And when reading.....

Once upon a time (when there were no monkeys in the circus) Monty moved to a place called Southend. At Southend they had a permanent circus called "Casbees Cartwheel Circus"

One day Monty decided he would go and see the circus. That evening he went to see the circus. He sat in the front row.

The circus went on like circuses do. It lasted 3 hours.

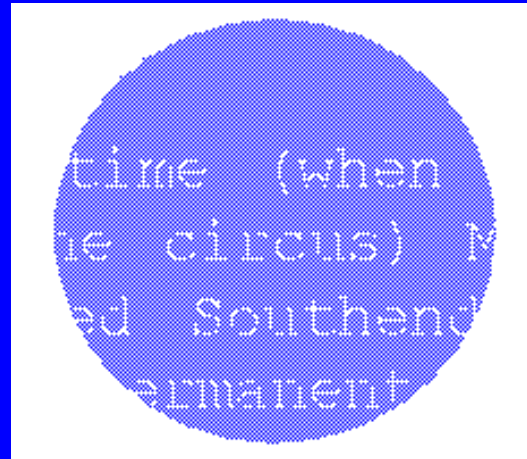
And when reading.....

Once upon a time (when there were no monkeys in the circus) Monty moved to a place called Southend. At Southend they had a permanent circus called "Casbees Cartwheel Circus"

One day Monty decided he would go and see the circus. That evening he went to see the circus. He sat in the front row.

The circus went on like circuses do. It lasted 3 hours.

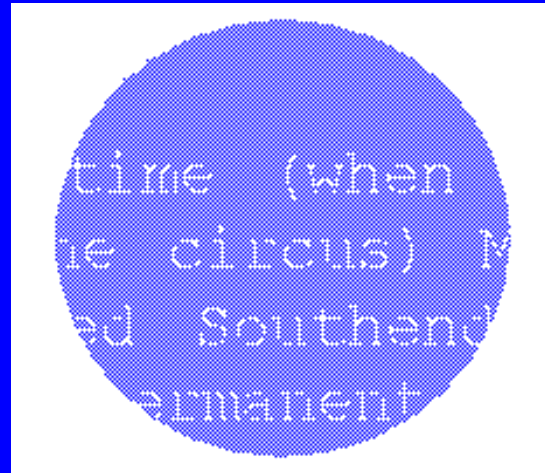
And when reading.....



...he is only seeing this small area at a time!

No wonder this child's reading is slow, boring and uninteresting for a teacher to listen to, and , with little understanding

And when reading.....



...he is only seeing this small area at a time!

No wonder this child's reading is slow, boring and uninteresting for a teacher to listen to, and , with little understanding

**He is working so hard simply decoding the words
--- he has little left for comprehension!!!!!!**



Imagine the difficulties when copying from the blackboard


When looking up to the board these children cannot find their place easily, often having to read from the beginning to find where they left off the last time

They can only pick up one or two words at a time

They then have to find their place on the paper often leaning down close to the paper to find a distance where the print is clear

And then go through the process again and again

No wonder they get tired at school and find some lessons so difficult



The result of a restricted functional field leads to the following visual problems :

- Poor eye movements - *tends to use head turning instead*
- Poor focusing control - *strain maintaining accurate focus*
- Poor fusional control – *poor brain integration of the two eyes*
- Reduced ability to focus in to a close near point
- Reduced range of clear near focus

The result of a restricted functional visual field leads to the following problems in education :-

slow reading

poor comprehension

difficulty with seeing a computer screen

difficulty with mental work such as Maths

difficulty copying from the blackboard

difficulty with ball / team games

behaviour problems

Some published statistics of visual problems affecting education

- **75% of students requiring compensatory educational services have abnormal eye movement characteristics - Ingersoll 1997**
 - **7 out of 10 adult illiterates show abnormal eye movement patterns – Zaba and Johnson 1991**
 - **90% of juvenile delinquent males tested abnormally in eye movements – Dowis 1977**
- (NOTE when therapy was undertaken by these juvenile delinquents, the re-offend rate dropped from 70% – < 30%)**
- **9% of 193 children had restricted fields with 83% of those failing in at least one subject – Eames 1947**
 - **20 – 25% of children have restricted functional visual fields (Tunnel vision) - Searfoss 1999**
 - **29% of an in-practice study of all children (91) attending over 3 months had fields <20 degrees - Shayler 2000**
 - **ADD children are 6 x as likely as norms' to have convergence insufficiency - Times report of US research 2000**
 - **All children assessed for school exclusion in Cheltenham area exhibited functional visual problems - Holland 2000**

A study carried out in a Bournemouth School on behalf of Geoff Shayler has shown that 1 in 4 children



are

affected with these problems

This study showed that children with these problems are:-

- More likely to achieve at lower SAT grades
- More likely to achieve below teacher expected SAT grades
- More likely to have behavioural problems

So what can we do about it ?

These children can *all* be helped by some form of specialised optometric intervention

Each child is different and may require a different approach –

Treatment regimes that we have found to be beneficial include the following :-

- Weak “low plus” spectacles
- Yoked prism lenses
- Optometric Vision therapy / Orthoptics
- Syntonic (Optometric) Phototherapy
- Developmental (retained reflex) training programs
- Occupational therapy
- Kinesiology
- Tinted lenses / coloured overlays

What is Optometric Vision Therapy?

Optometric Vision therapy is a training program to develop :-

- Fields – *expand peripheral awareness*
- Fixations – *accurate eye movements and convergence*
- Focus – *speedily and accurately change the focus of the eyes*
- Fusion – *the brains ability to integrate the information of the two eyes*
- Flexibility – *integration of each of the above with gross and fine motor activities*

How effective is vision therapy

The following slide shows the average changes in certain visual functions for a group of 22 children that underwent vision therapy at Shaylers Vision Centre

This study of 22 children who underwent VT, showed that there was an averaged improvement in the following:-

a closer near point(NP) of clear focus of **171%**

an extended far point by **176%**

improvement in depth of reading range (accommodative flexibility (AF) by **235%**

the AF/NP ratio increased by **368%**

Functional visual field diameters increases:-

Camp 1 (The Awareness field) –by **319%**

Camp 2 (The Perceptual field) – by **624%**

Camp 3 (The Activation field) – by **1194%! – and this is the important field that relates to reading ability**

*This lead to an average improvement increase in the available volume for reading of **33,498%!***

The next few slides will show some
of the training activities used during
vision therapy at
Shaylers Vision Centre



Bilateral integration and saccadic eye movement training



Binocularity and computer based training activities



Eye rotations, convergence and syntonics



Focusing



Visual memory



and

Stereo
training



Geoff Shayler Optometric qualifications

1973 City University, BSc Ophthalmic Optics

1974 Fellowship Worshipful Company of Spectacle Makers

1974 Fellowship Scottish Association of Opticians

1980 Fellowship British College of Optometrists

1995 Fellowship College of Optometrists

2001 Fellowship College of Syntonic Optometry

2010 City and Guilds, Level 3, Certificate in Diabetic Retinopathy
Screening

2014 Honorary Membership of Behavioural Optometry Academy
Foundation

2016 Fellowship of Behavioural Optometry Academy Foundation

2016 Fellowship European Academy of Syntonic Optometry

Published articles by Geoff Shayler BSc., FCOptom, FCSO, FBOAF, FEASO [part 1]

Kinesiology - has it a use in Optometric Practice? Proceedings of IASK conference, 1997

Functional visual fields - Their importance in the assessment of children with educational difficulties, Optician AUGUST 11, 2000 No 5763 VOL 220

Functional Visual Fields and Dural Torque, Journal of Optometric Phototherapy, April 2000 (US) in association with Dr Dale Fast (California) and Dr Wayne Pharr (Florida)

Vision Therapy in Practice, 20/20 Europe, Oct 2001

Yoked Prisms, BABO, 2002

Using the Laser pointer in Optometry, Optometry Today, Oct 18th 2002

The relationship between Reading range and Functional Visual Field restrictions, Journal of Optometric Phototherapy, April 2002) (US)

Visual fields and a new Model of the Island of Vision Journal of Optometric Phototherapy April 2003 (US)

Identifying Functional field problems in Adults and their relationship with reading range, Societe d'Optometrie d'Europe 179, 2003 (Europe)

Childhood visual problems and education Part 1, Near point and educational performance, Optometry Today, Oct 2003

Childhood visual problems and education Part 2, Educational and visual performance links, Optometry Today, Nov 2003

Childhood visual problems and education Part 3, Educational and visual performance links, Optometry Today, Nov 2003

Vision and Learning, Journal of Optometric Phototherapy, April 2004(US)

Stress and Reading, BABO, January 2005

Stress and Reading: A Neurological Approach, Journal of Optometric Phototherapy, April 2005(US)

Published articles by Geoff Shayler BSc., FCOptom, FCSO, FBOAF, FEASO [part 2]

16. Skeffingtons Circles and Functional Visual Fields, Journal of Optometric Phototherapy, Apr 2006
17. The effects of reduced near visual function, Journal of Optometric Phototherapy, Feb 2008
18. Hidden vision problems in Parkinson's and stroke patients, Journal of Optometric Phototherapy, Mar 2009
19. Optometric remediation for problems caused by Visual Display Unit use, Optometry Today, Aug 2009, (peer reviewed)
20. A little gem of a book, Environmental and Occupational Optometry, (book review), Optometry Today, Nov 2009
21. Using the Bagolini lens in Vision therapy practice, Journal of Optometric Phototherapy, Mar 2010
22. Ageing vision, Part 1: Neurology of vision, A new model, Optometry Today 14.01.11(CET approved article)
23. Deux tests simples, pour reconnaître l'enfant qui échoue à l'école, du fait de difficultés de traitement visuel, LRO La Revue, No 36, January 2011, p36-42
24. Ageing vision, Part 2: Visual features of Parkinson's Disease, Optometry Today 28/1/11 p37-40(CET approved article)
25. Ageing vision, Part 3: Visual dysfunction in Alzheimer's disease Optometry Today 11/2/11 p 37-40(CET approved article)
26. Ageing vision, Part 4: The role of optometrists in identifying visual problems in patients with Alzheimers or Parkinsons Diseases Optometry Today , 25.02.11, p41-44 (CET approved article)
27. Breaking the Fall, Optician, 17.06.11 p17
28. Neurology, a new model of vision, Optometrie, Fachpubikation fur Augenoptik (Germany) vol 4 2011, p64-67
29. Ageing vision, Part 2: Visual features of Parkinson's Disease, Optometrie, Fachpubikation fur Augenoptik (Germany) 1 2012
30. Ageing vision, Part 3: Visual dysfunction in Alzheimer's disease Optometrie, Fachpubikation fur Augenoptik (Germany) 2 2012
31. Ageing vision, Part 4: The role of optometrists in identifying visual problems in patients with Alzheimer's or Parkinson's Diseases Optometrie, Fachpubikation fur Augenoptik (Germany) 3 2012
32. Syntonic Theory and the Visual Process, Journal of Optometric Phototherapy, Mar 2012
33. Vision, Posture and Manipulative therapies, BOAF Journal, 2012
34. Vision and Falls, Optometry Today, 20.06.14, 52-55 (CET approved article)
35. The use of models to help our understanding of vision, Optometry and Visual Performance, Vol3, Iss 3
36. The association of Static (form) and motion coherence thresholds with various measures of visual and scholastic performance, Optometry and Visual Performance, Vol 4, Iss 16, 2016, Nov

International conference lectures given:-

- Kinesiology: has it a use in Optometric Practice? International Association of Specialised Kinesiologies IASK conference, Kings College, London 1997
- Visual fields and a new Model of the Island of Vision, ICBO conference, Versailles, France 2003
- Magno-Parvo cellular Beziehung mit Sehen und Lernen, WVAO (Wissenschaftliche Vereinigung für Augenoptik und Optometrie), conference Mainz, Germany, November 2007
- Magno / parvo cellular relationships with vision and learning, 76th International Conference on Light and Vision ,Phoenix, Arizona 2008
- Can a Simple Reading Test identify which Children are failing in School due to a Visual Processing Difficulty, Child Vision Research Society conference, Cardiff University 2009
- Two simple tests to identify which Children are failing in School due to a Visual Processing Difficulty, 29th Congress of Optometry, Cité Internationale Universitaire de Paris for the Association des Optométristes de France (AOF) 2010
- Curriculum 1 course for College of Syntonic Optometry (2 day presentation) Oswego, near Chicago Ill. USA, August 2011
- The m/p journey (an investigation into the neurological/visual reasons for educational underachievement), BABO conference, Christchurch College, Oxford 2011,
- Visual stress - assessment and remediation (workshop), BABO conference Christchurch College, Oxford, 2011,
- What is the purpose of the eye, BABO Southern regional meeting, 2013
- Ageing vision and Syntonics, Symptoms and therapy, 81st International Conference on Light and Vision, Tampa, Florida, USA 2013
- A voyage of discovery - What is the purpose of the eye, Annual Conference, Behavioural Optometry Academy Foundation (BOAF), 2013
- Better understanding the magno-parvo journey, Annual Conference, Behavioural Optometry Academy Foundation (BOAF), 2013
- Ageing_vision_and_syntonics, Annual Conference, Behavioural Optometry Academy Foundation (BOAF), 2013
- The relationship of motion coherence threshold testing with optometric and educational testing. International congress in Behavioural Optometry, 2014
- Fast track vision therapy (2 day course,) held in Wil, Switzerland, 2014
- Fast track vision therapy (1 day workshop) preceding 83rd Light and Vision Conference, Santa fe, New Mexico, October 2015
- Convergence Insufficiency, a syntonic view, 83rd Light and Vision Conference, Santa fe, New Mexico, October 2015
- The Language of Vision, BOAF conference, Vienna, Nov 2016

Useful websites

- www.visiontherapy.co.uk
- www.babo.co.uk
- www.inpp.org.uk
- www.pavevision.com
- www.childrensvision.com
- [facebook/visiontherapyparentsunite](https://www.facebook.com/visiontherapyparentsunite)
- [facebook/visiontherapyuk](https://www.facebook.com/visiontherapyuk)



For more information, contact :-

Geoff or Loraine Shayler

at

Shaylers Vision Centre

25 West Street

Wareham, Dorset.

01929 553928

www.visiontherapy.co.uk

Email kinoptom@lineone.net