

Child Vision  
Research Society



Second Meeting  
Cambridge, 3-4 July 1989

**The organizers gratefully acknowledge:**

**the help of the Departments of Experimental Psychology and Physiology, University of Cambridge, in providing facilities for the meeting**

**the support of the Ulverscroft Foundation and of the exhibitors, Clement Clarke International Ltd and Keeler Ltd.**

**Child Vision Research Society Committee:**

Dr Janette Atkinson, Visual Development Unit, Cambridge  
Prof Colin Blakemore, University Laboratory of Physiology, Oxford  
Prof Alistair Fielder, Dept of Ophthalmology, University of Birmingham  
Prof David Hull, Dept of Child Health, University of Nottingham  
Dr Tony Kriss, Dept of Neurophysiology, National Hospital, London  
Dr Alan Leslie, MRC Cognitive Development Unit, London  
Mr David Taylor, Dept of Ophthalmology, Hospital for Sick Children, London

**Meeting Organization:**

(Cambridge) Janette Atkinson  
Shirley Anker, Oliver Braddick, Nicola Gardner, Roslyn Hedge, Bruce Hood,  
Jocelyn Smith, Jo Tricklebank, John Wattam-Bell, Frank Weeks

(Birmingham) Alistair Fielder, Merrick Moseley

## MONDAY JULY 3RD

All papers will be presented in Physiology Theatre 3, Downing Site (next to the Department of Experimental Psychology, opposite Geography). Posters and manufacturers' exhibits will be on display in the Classroom, Department of Experimental Psychology, Downing Site. Lunch, tea and coffee will also be served in the Classroom.

9.00 - 10.45 am

Registration and refreshments

### SESSION 1: CHROMATIC AND TEMPORAL FACTORS IN INFANT VISION

Chair: Prof. F W Campbell, The Physiological Laboratory, University of Cambridge, England

11.00 am

Development of chromatic visual evoked potentials

D C Burr, M C Morrone and A Fiorentini, Istituto di Neurofisiologia del CNR, Pisa, Italy

11.15 am

Development of temporal properties of pattern responses in infants

A Fiorentini and C Trimarchi, Istituto di Neurofisiologia del CNR, Pisa, Italy

11.30 am

Behavioural assessment of infants' sensitivity to image motion

J Wattam-Bell, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK

11.45 am

Anomalous motion VEPs in infants and in infantile esotropia

A M Norcia, R Humphry, H Garcia and A Holmes, Smith-Kettlewell Eye Research Institute, San Francisco, CA, West of England Eye Infirmary, Exeter and Fundacion Oftalmologia Pediatrica, Buenos Aires, Argentina

12.00 noon

Discussion

12.15 - 2.00 pm

Lunch, sponsored by Clement Clarke International Ltd

Poster session

Visit to the Visual Development Unit or the Craik Vision Laboratory

### SESSION 2 : MINI-SYMPOSIUM : BINOCULAR VISION

Chair: Prof. H B Barlow, The Physiological Laboratory, University of Cambridge, England

2.00 pm

Stereopsis, visual acuity and optokinetic nystagmus in strabismic infants before and after corrective surgery: implications for the critical period

J Smith, J Atkinson, O J Braddick, J Wattam-Bell, A T Moore and S Anker, Visual Development Unit, University of Cambridge, Cambridge, UK and Addenbrookes Hospital, Cambridge

2.15 pm

Seven years of clinical experience with the Lang Stereotest in young children

J Lang, Freiestr 47, CH-8032, Zurich, Switzerland

Monday July 3rd (continued)

2.30pm

**An evaluation of techniques for measuring stereopsis in infants and young children**

H Broadbent, R Candy, C Westall and R Shute, Department of Optometry, UWCC, Cardiff

2.45 pm

**Binocular contrast masking in strabismic amblyopia**

R Harrad and R Hess, The Physiological Laboratory, University of Cambridge, England

3.00 pm

**The effect of prolonged monocular occlusion on latent nystagmus in the treatment of amblyopia**

H J Simonsz and G Kommerell, Netherlands Ophthalmic Research Institute, Amsterdam

3.30 pm

**Discussant: O J Braddick, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK**

**Binocular vision as a model developmental system**

4.00 pm

**Tea**

**Session 2 (continued)**

Chair: Prof. A Fielder, Birmingham University Medical School, Birmingham, UK

4.30 pm

**A specific literacy difficulty - binocular instability. A case study**

R Grant, 21 Crescenta Walk, Bognor Regis, W. Sussex

4.45 pm

**Preferential-looking in the clinic and eradication of functional amblyopia**

F Vital-Durand, B  b   Vision, INSERM Unite 94, Bron, France

5.00 pm

**Heredity: a useful factor for detecting amblyopia?**

E Aurell and K Norrsell, Eye Department, County Hospital, M  lndal and Department of Ophthalmology, Sahlgren's Hospital, G  teborg, Sweden

5.15 pm

**A longitudinal study of a population based sample of astigmatic children**

J Sj  strand, M Abrahamsson and G Fabian, Department of Ophthalmology, Sahlgren's Hospital, G  teborg, Sweden and Vaster  s, Sweden

5.30 pm

**The prediction and prevention of strabismus and amblyopia achieved in the Cambridge infant photorefractive screening programme**

J Atkinson, O J Braddick, J Wattam-Bell, P Watson, K Durden, W Bobier, J Pointer, S Anker, M A MacIntyre and V Norris, Visual Development Unit, University of Cambridge, UK

5.45 pm

**Discussant: Prof. A Fielder, Birmingham University Medical School, Birmingham, UK**

**Do we need binocular vision?**

6.45 pm Reception: Scholars' Garden, Clare College

7.30 pm Special Conference Dinner: Clare College Hall

## **TUESDAY JULY 4th**

### **SESSION 3: NEWBORN VISION**

Chair: D Taylor, Dept of Ophthalmology, Hospital for Sick Children, Great Ormond Street, London

9.15 am

#### **Vision in the preterm neonate**

J Grose, G F A Harding, A Y Wilton and J G Bissenden, Dept Vision Sciences, Aston University, Birmingham

9.30 am

#### **Taurine and the electroretinogram in the preterm infant**

A Y Wilton, J G Bissenden, J Grose and G F Harding, Dudley Road Hospital, Birmingham, and the Dept of Vision Sciences, Aston University, Birmingham

9.45 am

#### **The pupils of preterm neonates**

J Robinson and A R Fielder, Dept of Ophthalmology, Birmingham and Midland Eye Hospital, Birmingham

10.00 am

#### **Visual impairments in Very Low Birth Weight (VLBW) infants during the first year after term**

J van Hof-van Duin, Erasmus University, Dept of Physiology, Rotterdam, The Netherlands

10.15 am

#### **Visual-verbal differences among VLBWs at school-age**

J M Bill, E A Hoy and D H Sykes, School of Education, Queens University, Belfast

10.30 am

#### **Discussion**

10.45 am

#### **Coffee**

11.15 am

#### **Delayed visual maturation - a subcortical defect?**

A Fielder and J Tresidder, Birmingham University Medical School, Birmingham, UK

11.30 am

#### **Temporal rate as a determinant of orientation discrimination in infants**

B Hood, J Atkinson, O J Braddick and J Wattam-Bell, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK

11.45 am

#### **Development of shape and object perception from birth**

A Slater, A Mattock and E Brown, Dept of Psychology, Washington Singer Laboratories, University of Exeter, Exeter

12 noon

Discussant: J Atkinson, Visual Development Unit, University of Cambridge, England  
**Subcortical or cortical control of newborn vision? A revised model**

12.30 - 1.00 pm

**Lunch, sponsored by Keeler Instruments Ltd**

Tuesday July 4th (continued)

1.00 pm

Poster session

Visit to the Visual Development Unit

**SESSION 4: PAEDIATRIC ASSESSMENT OF VISION**

Chair: J van Hof-van Duin, Erasmus University, Dept of Physiology, Rotterdam, The Netherlands

2.00 pm

**The Teller Acuity Card Test: a useful method for the clinical routine?**

B Katz and R Sireteanu, Max-Planck-Institute for Brain Research, Frankfurt, FRG

2.15 pm

**The acuity card procedure: theory and practice**

M J Moseley, Dept Ophthalmology, University of Birmingham, England

2.30 pm

**Visual field development in young children**

D J Heersema, J van Hof-van Duin and W C J Hop, Depts of Physiology and Biostatistics, Erasmus University, Rotterdam, The Netherlands

2.45 pm

**Contrast sensitivity evaluation in children with congenital nystagmus**

C A Westall and J M Woodhouse, Dept of Optometry, UWCC, Cardiff

3.00 pm

**The use of low vision aids by visually-impaired children**

S Leat and S Karadsheh, Laboratory of Experimental Optometry, UWCC, Cardiff

3.15 pm

**The Sonksen-Silver Acuity System: a synthesis of developmental and optometric thought**

P M Sonksen and J H Silver, The Wolfson Centre, Institute of Child Health, London

3.30 pm

**Atkinson Battery of Child Development for Examining Functional Vision (ABCDEFV)**

J Atkinson, N Gardner, J Tricklebank and S Anker, Visual Development Unit, University of Cambridge, England

3.45 pm

**Discussion**

4.00 pm

**Cream Tea and departure**

## **POSTERS**

### **Growth of the human eye**

M R Angi, Università di Padova-Clinica Oculistica, Padova, Italy

### **The use of the Cambridge Crowding Cards in preschool vision screening programmes, ophthalmic clinics and assessment of children with multiple disabilities**

S Anker, J Atkinson, and A Macintyre, Visual Development Unit, University of Cambridge, and Moorfields Eye Hospital, London

### **Temporal frequency and orientation selectivity of young infants' orientation-specific responses**

J Atkinson, O J Braddick, J Wattam-Bell, B Hood and F Weeks, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK

### **A new system for pupillometry and simultaneous 2D eye movement measurements**

J L Barbur, City University, Applied Vision Research Centre, London

### **Development of peripheral vision in normal and binocularly deprived children**

E R Bowering, D Maurer, T L Lewis, P Brent and H P Brent, McMaster University, St Joseph's Hospital, Hamilton; The Hospital for Sick Children, Toronto, Ontario, Canada

### **Behavioural and VEP measures of developing contrast sensitivity and binocularity: do they reveal different mechanisms?**

O J Braddick, J Atkinson, J C Smith and B Hood, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK

### **Word- and picture-processing by partially sighted children**

G Corley, Goldsmiths College, University of London

### **Accommodative 'tonus', refraction and autorefractometry of hypermetropic students**

D L Ehrlich, Department of Optometry and Vision Sciences, UMIST, Manchester

### **The outcome of strabismus surgery (a preliminary report)**

N Evans, N Astbury, T Stephenson, J Skinner, L Walters and J Edge, Department of Ophthalmology, West Norwich Hospital, Norwich

### **Flow-chart of procedure for identifying and treating children with literacy difficulties**

R Grant, 21 Crescenta Walk, Bognor Regis, Sussex

### **Refractive error and accommodation in pre-term infants**

J Grose and G Harding, Department of Vision Sciences, Aston University, Birmingham

### **Development of visual acuity during the neonatal period in preterm and fullterm infants**

A J M Hermans, J van Hof-van Duin, and A M Oudesluijs-Murphy, Department of Physiology, Erasmus University, Rotterdam, and Zuiderziekenhuis Rotterdam, Department of Pediatrics

### **Visual attention shifts in infants and neurologically impaired children**

B Hood, J Atkinson, O J Braddick and J Wattam-Bell, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK

**VEP findings in infancy: normal and disturbed development during the first 6 months of life**

T Kau, K-P Boergen and B Lorenz, Augenklinik der Universität München, München, FRG

**Ophthalmological follow-up of very low and normal birth weight children at 7 to 10 years of age (preliminary results)**

F G McGinnity, Eye and Ear Clinic, Royal Victoria Hospital, Belfast

**Real and false throws in the STYCAR rolling balls test**

R M McNamara, Orthoptic Department, Leeds General Infirmary, Leeds

**Visual functions in very low birthweight children at five years of age**

J W R Pott and J van Hof-van Duin, Department of Physiology, Erasmus University, Rotterdam, The Netherlands

**Albinism in Childhood: an electrophysiological study**

I Russell-Eggitt, A Kriss and D Taylor, Dept of Ophthalmology, Hospital for Sick Children, Great Ormond Street, London

**Sensitivity to optical blur of vision-screening procedures for children**

P Schmidt, The Ohio State University College of Optometry, Columbus, Ohio

**Sample sizes in Ophthalmology**

DE Shaw, Birmingham and Midland Eye Hospital, Birmingham

**Visual development in monkeys assessed with the Teller Acuity Cards**

R Sireteanu, B Katz, G Mohn and F Vital-Durand, Max-Planck-Institute for Brain Research, Frankfurt, FRG, Eye Clinic of the University, Tübingen, and INSERM, Bron, France

**Infant refractive development in the first year: cross-sectional and longitudinal findings**

C M Thompson, Department of Vision Sciences, Aston University, Birmingham

**The development of motion-specific cortical responses in infants**

J Wattam-Bell, Visual Development Unit, Department of Experimental Psychology, University of Cambridge, Cambridge, UK