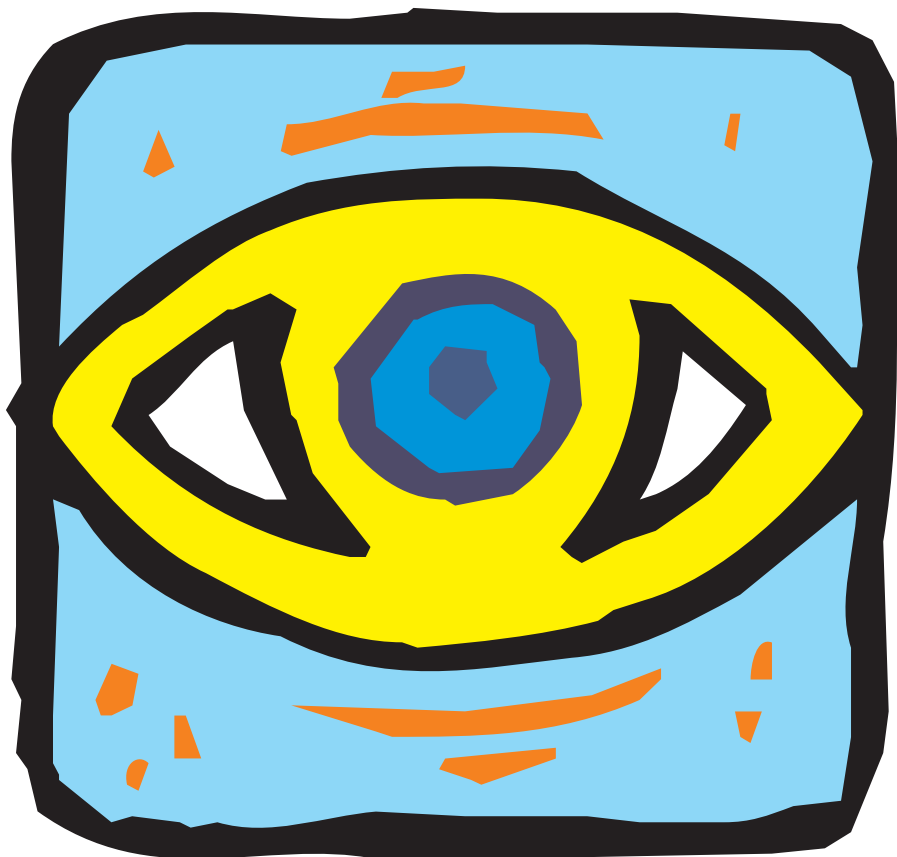


Bulletin of the Applied Vision Association



Geoffrey J. Burton: reports
Call for papers: depth perception
Vision in Vehicles
Book review: Tovée
References on Vision

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APPLIED VISION ASSOCIATION

VISION

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*AIM OF THE AVA: TO PROMOTE AND ADVANCE THE APPLICATION
OF RESEARCH WORK IN ALL AREAS RELATED TO VISION*

Editorial

The AVA was very sad to hear of the death of Professor W.D. Wright on 4th June 1997. W.D. Wright was one of the founders of the Colour Group (UK) and was one of the pioneers of colour vision research. Based at Imperial College, London, W.D. Wright made a series of colour matching measurements in the late 1920s that were used as a basis of the CIE 1931 standard colorimetric observer. We intend to write more about the life of W.D. Wright in a future edition of the Bulletin.

On a more happy note, following the announcement of the two awards from the Geoffrey Burton Memorial fund in the last edition of the Bulletin we now publish the report from the recipients, Alison Statham and Ashley Shepherd. The deadline for the next round of applications is 31st August 1997.

In this issue we have a reminder about the AVA meeting on depth perception at Surrey University organised by Mark Bradshaw. Please contact Mark for the latest information about the conference.

At AVA'97 there was a civic reception in Dundee. A photograph was taken of those who attended the reception and this picture is reproduced on our web site. It can be viewed by pointing your browser to:
<http://www.dmu.ac.uk/ava/ava97photo.html>

For information to AVA members we include details of the Vision in Vehicles conference in Marseilles that is being organised by Professor Alastair Gale from the University of Derby. More information can be obtained by emailing: A.G.Gale@derby.ac.uk

Remember that the latest information on the AVA is on our web site:
<http://www.dmu.ac.uk/ava/>

If you have any comments on the Bulletin of the AVA then do contact me: mcase@dmu.ac.uk

Deadline for copy for the next Bulletin - 18th August 1997



Noticeboard



AVA on the World Wide Web

The Applied Vision Association now has its own world wide web pages at:

<http://www.dmu.ac.uk/ava/>

The pages contain details of who is on the committee, contact emails, latest details on forthcoming AVA meetings and links to other vision related pages. There are also archives of abstracts from previous AVA meetings.

Forthcoming AVA Meeting

Postgraduate Meeting. 5th November 1997, College of Optometrists, London.

There will be a meeting for postgraduates and researchers up to one year postdoctoral to present papers at the College of Optometrists. The purpose of this meeting is to give postgraduates an opportunity to present research (not necessarily complete) in a friendly, non-hostile atmosphere. For more information contact the AVA Secretariat on: 0171 373 7765

AVA and OPO Subscriptions

Membership for 1996/1997 is the same price as last year. However, the price for OPO subscriptions has increased slightly. Those members who pay by standing order please don't forget to amend your standing order accordingly.

Geoffrey J. Burton Memorial Fund

The fund was established in 1986 with the aim of providing financial assistance to students (in non-established or fixed term posts) based in the UK travelling to any conferences or meetings at which they will be presenting a paper or poster. Donations to the fund can be directed to the AVA secretariat and cheques etc. should be made payable to "The Geoffrey J. Burton Memorial Fund".

The maximum award to any one individual is £200.

Awards can be made for any conference in the calendar year in which the award falls (1997 in this case). You do not have to be presenting at an AVA conference. The awards will be made twice a year.

The next closing date for applications is:

31st August 1997

To apply for an award you need to complete an application form which is available from:

The AVA Secretariat,
College of Optometrists,
10 Knaresborough Place,
London,
SW5 0TG.

Two people were awarded travel grants of £175 each from the last round of applications. One of the conditions of the award is that successful applicants should write a short report describing the conference they attended. We now include the reports from Alison Statham and Ashley Shepherd who were given awards earlier this year.

Alison Statham, University of Birmingham, gave a presentation entitled “Depth perception can use first and second order disparities” at the AVA meeting in Dundee.

AVA AGM Meeting Report—Dundee

Image Quality 9th - 11th April 1997

6am One spring morning.

Vision Scientists were stirring from their beds. Whether it be to rush off to Edinburgh to pick up important delegates stranded at the airport, in order to catch the shuttle from Heathrow or to leave the “sleeper” on arrival at Dundee station, the general consensus was is it was early; too early.

Being “way up in Scotland” Dundee is not the sort of place most people would get a chance to see without a specific reason but it proved the perfect backdrop to this AVA meeting typified by the friendly welcome from Dundee in the form of a generous Civic Reception held for us on the first evening at the City Chambers. It did mean that long distance delegates may have been in need of a little sleep but because there was always something going on or someone you wished to talk to sleep was gladly postponed. The varied methods of transport used to attend was representative of the diversity of backgrounds represented at the conference. Personally I was amazed at the variety of vision research happening and the different environments it takes place in whether they be psychological and clinical techniques based in academia or the application specific developments in industry. This diversity meant that for each session there was a new and interesting perspective for novices, as myself, and old-timers alike.

A commendable balance between a structured timetable with an informal attitude was achieved such that there was plenty of opportunity to discuss presentations between sessions and make or renew friendships. The generous time allowed for presentations enabled all talks to be appreciated by all (and not just those working within that specific field) as there was time for basic introductions. This was particularly valuable for the Industry session. I am sure I am not the only one who needed to be told that a “HUD” is a Head-UP-Display before I could appreciate the visual implications. I found this session particularly

thought provoking as it showed me both a purpose of vision research and the requirement for compromise once the blue-sky research comes down to earth.

Though Image Quality was the conference title a theme common to many talks was Depth Perception. Stereoscopic displays were evaluated and human performance demonstrated, analysed and related directly to applications of virtual reality and aeroplane piloting. There were also fascinating presentations on the motion aftereffect, encoding at the physiological level of the spatial domain and more artificially of faces, and on the integration/independence of mechanisms relating to colour and motion, motion and depth, and first and second order spatial vision.

On the Thursday evening there was a break from science in the form of a trip round HMS Unicorn, the oldest Warship still afloat, certain parts of the tour required certain physical dexterity but having heard a couple of pilots on a video earlier in the day in spite of querying "Do you think we can get through there?" and the reply "I don't think so" we knew we could easily squeeze along the child sized routes in the hull! This visit was followed by a delicious meal at Pierre Victoire where the good wine led to fine spirits .

Overall the conference was a thoroughly enlightening and enjoyable experience not least because of the welcoming atmosphere. I would certainly recommend attendance at future AVA events especially to those working in industry and postgrads who may feel a little wary of high-powered academics; honest they really don't bite.

Alison Statham

Ashley Shepherd, Glasgow Caledonian University, gave a presentation entitled “Development of the Pattern Reversal Visual Evoked Potential (PRVEP) in preterm and fullterm infants” at the 6th Meeting of the Child Vision Research Society Pisa, Italy.

6th MEETING OF THE CHILD VISION RESEARCH SOCIETY (CVRS)

The Child Vision Research Society (CVRS) comprises researchers from many different countries, interested in the development of vision in infancy and early childhood, under normal and abnormal conditions. A wide range of disciplines, including anatomy, physiology, neurology, psychology, ophthalmology and rehabilitation are represented in the CVRS. A scientific meeting is organised every second year to provide an opportunity for exchanging new ideas and findings between basic scientists and clinicians concerned with vision in infants and children. Active participation of CVRS and non-CVRS members attending the meeting is encouraged, by means of short oral presentations and posters. Information relevant to vision in preterm infants was found throughout the scientific sessions but was most concentrated in the “Development of Vision” and “Vision and child development/rehabilitation” sections.

Presentation

Development of the pattern reversal VEP in preterm and full term infants:

Development of Vision Session : 7 June, 1997.

This poster was one of 10 in the Development of vision Session. The poster described a study of pattern reversal VEPs (PRVEP) in 35 preterm infants born between 26 and 35 weeks gestation and 20 fullterm infants tested at the corrected ages of 3, 6 and 12 months. The (PRVEP) is the most commonly used pattern stimuli in the electrophysiological assessment of infants and toddlers vision. It has been shown that PRVEPs can be recorded in infants from 33 weeks gestation and show remarkable change with increasing age. The study investigated the PRVEP in preterm infants with and without cranial ultrasound (CU) abnormalities and examined the effect of the presence and severity of CU abnormalities on the PRVEP. We demonstrated that the PRVEP matured between 3, 6 and 12 months in the low and moderate risk (based on CU abnormalities) preterm and fullterm group. Abnormal PRVEPs were recorded from a

number of high risk infants. However, based on our current sample the PRVEP abnormalities did not appear to be directly related to the severity of the CU abnormality.

There was considerable interest in this poster especially from researchers who are currently using the PRVEP technique or those researchers who were particularly interested in the preterm infants visual development. A group of researchers from Amsterdam who had been conducting similar work were able to provide some advice on the recording technique used. We discussed the common types of CU abnormalities they had encountered when testing a premature group of infants of the same gestational age. Discussions with Dr A Kriss (Gt Ormond St Hospital, London) were also very helpful.

Meeting highlights and benefits of attendance

The sessions on Development of Vision, Vision and Child Rehabilitation, and Ophthalmology clinical Studies were of particular interest. Prematurity is frequently associated with visual impairment and these sessions provided an opportunity to learn about the latest research in this field.

A very interesting paper on the comparison of pre- and fullterm visual development was presented by Gottlob and Weinacht (Switzerland). They assessed grating visual acuity, ocular alignment and OKN in a group of fullterm infants and low risk preterm infants between the 44th and 54th week postmenstrual age. They concluded that no differences occurred when the parameters were compared at postmenstrual ages and therefore additional visual experience gained by preterm infants did not influence the development of grating visual acuity or binocular vision measured from time of conception.

In the Neurology Clinical Studies Session a very interesting paper investigated visual perceptual abilities of 5 year old children with neonatal ultrasound abnormalities (*Vandenbussche et al*). They concluded that on CU scans the condition most strongly associated with visual perceptual deficit is permanent white matter abnormalities, whereas intracranial haemorrhage is unrelated.

Many of the poster presentations were extremely relevant to the work we are conducting in Glasgow. These included "Analysis of visual function with VEPs and Teller acuity cards in premature and term infants" (*Ruberto*

et al), “Visual and Psychomotor development emphasising on visual perception in at-risk neonates at 5.5 years of age” (*Van den Hout et al*), “Visual outcome at one year of preterm infants with periventricular leukomalacia” (*Fazzi et al*), and “Visual perception and performance intelligence in cerebral visual impairment due to neonatal brain damage” (*Stiers et al*).

Abstract to be published in *Perception*

Development of the pattern reversal VEP in preterm and fullterm infants. A.J. Shepherd, K.J. Saunders, D.L. McCulloch

Department of Vision Sciences, Glasgow Caledonian University, Cowcaddens Road, and The Royal Hospital for Sick Children, Glasgow, UK.

The aim of the present longitudinal study was to examine the development of pattern reversal visual evoked potentials (PRVEPs) in a group of high and low risk preterm, and fullterm infants in the first year of live. **Subjects.** Preterm infants (gestational age 26-35 weeks) and fullterm infants (gestational age 38-43 weeks) were tested at the corrected age of 3 months (preterm n=29, term n=19), and re-tested at 6 months (preterm n=33, term n=16), and at 12 months (preterm n=21, term n=3). For each age group, preterm infants were divided into high risk (3/12:n=4, 6/12:n=4, 12/12:n=0) or low risk according to the presence and severity of cranial ultrasound abnormalities including intraventricular haemorrhages, ventricular dilation and periventricular echogenicity. **Methods.** PRVEPs were recorded from an occipital electrode to a range of check sizes. Starting at 120' checks, patterns were presented in a staircase manner until a threshold was reached or until co-operation was lost. **Results.** For all check sizes the PRVEP matured between 3, 6 and 12 months in both the preterm and fullterm groups. The prominent P100 component became consistently earlier as the infants age increased (ANOVA $p < 0.005$). No significant differences were found between the PRVEPs of the low risk preterm group and the fullterm group at 3, 6 or 12 months of age (ANOVAS $p > 0.1$). Some PRVEP abnormalities were found in infants in the high risk preterm group at all ages. (This group currently too small for valid statistical comparisons). **Conclusion.** The PRVEP was found to mature at the same rate in both preterm and fullterm infants during the first year of life when age is corrected for prematurity. The presence of an abnormal cranial ultrasound appears to increase the risk of a delayed or abnormal PRVEP.

Supported by SOHHD, Chief Scientists Office Grant K/RED4/C265.

Ashley Shepherd

AVA books for sale

The AVA still has a number of new books for sale from conferences that it has organised over the years.

Payment can be by cheque or postal order in UK pounds (sorry, no credit cards) to "Applied Vision Association". Send your payment with the order to:

AVA Secretariat,
Applied Vision Association,
College of Optometrists,
10 Knaresborough Place,
London SW5 OTG.

Books available:

The cost for each book is £15 (including postage in the UK) for AVA members or £20 for non-AVA members. If you are outside the UK then add £5 per book to each of the prices above.

Gale, A.S., Astley, S.M., Dance, D.R. and Cairns, A.Y. (1994) **Digital Mammography**. Elsevier (424 pages).

Gale, A.S., Freeman, M.H., Haslegrave, C.M., Smith, P. and Taylor, S.P. (1988) **Vision in Vehicles II**. North Holland (420 pages).

Gale, A.S., Brown, I.D., Haslegrave, C.M., Krusysse, H.W. and Taylor, S.P. (1993) **Vision in Vehicles IV**. North Holland (355 pages).

Brogan, D., Gale, A. and Carr, K. (1993) **Visual Search 2**. Taylor and Francis (477 pages).

The cost of the Dalton conference book is £43 (including postage in the UK) for AVA members or £48 for non-AVA members. If you are outside the UK then add £5 per book.

Dickinson, C., Murray, I. and Carden, D. (1996) **John Dalton's Colour Vision Legacy**. Taylor and Francis (784 pages).

Book Review

An introduction to the visual system

Martin J. Tovée

1996 Cambridge University Press

ISBN 0-521-48339-5 £12.95 (paperback)

ISBN 0-521-48290-9 £35.00 (hardback)

As the title of this book implies, Martin Tovée has chosen to write a book that covers a lot of ground and introduces a number of topics in vision science. The book is fairly brief (200 pages) yet contains 12 chapters on different aspects of visual function. It is clearly intended to be used for undergraduate teaching and I suspect that second year students would benefit most. Each chapter ends with a series of numbered “key points” that would be helpful to students revising for an examination.

In common with most books on vision this text begins with a description of the anatomy of the eye and the visual pathway. The genetics of colour vision are outlined. Chapters 4 to 6 describe the anatomy of the visual cortex and cortical development of vision. After a chapter on colour constancy there are chapters on object and face recognition. Motion perception and stereo vision each get a chapter in the book. The book concludes with a chapter which raises issues such as how distributed information in the cortex is reintegrated.

Each chapter in the book cites references that are up to date and the book is easy to read. For undergraduates wanting a modern overview of vision I think this book would be entirely suitable. However, I did feel that perhaps one of the strengths of the book—the fact that it attempts to cover such a vast number of topics in brief—would put off some vision scientists who would have liked more detail. There are a number of other books on vision that are much more comprehensive in content: Zeki’s “A Vision of the Brain” gives a thorough description of visual neurophysiology; Wandell’s “Foundations of Vision” describes vision much more mathematically and from a linear systems point of view. “Visual Perception” by Bruce et al is well written and certainly contains much more information than Tovée’s book. However, if you are looking for a brief, wide-ranging introductory text on vision then this book fits the bill.

Mark Scase

Applied Vision Association Meeting

4th September 1997 DEPTH PERCEPTION (Physiology and Psychophysics)

Announcement

Applied Vision Association will be holding a special 1-Day Conference/ Workshop on DEPTH PERCEPTION (Physiology and Psychophysics) September 4th 1997 at the Department of Psychology, University of Surrey, Guildford, UK.

Invited speakers:

Prof. A.J. Parker / Dr B.G Cumming,
Physiology Laboratory, University of Oxford.

Prof B.J. Rogers

Experimental Psychology, University of Oxford.

Prof. B.J. Gillam

Psychology Department, University of NSW, Australia

Abstracts will be published in Perception and authors will be invited to submit a paper to be published in a special issue of the journal within 3 months of the meeting.

Further information can be obtained from:

Dr M.F. Bradshaw,

Psychology Department,

University of Surrey,

Guildford

<http://www.dmu.ac.uk/ava/meetings.html>

GU2 5XH, U.K.

email: M.Bradshaw@surrey.ac.uk or P.Hibbard@surrey.ac.uk

Registration is £20 UK which includes refreshments and lunch.

Guildford is easily accessible from London (35 mins by train) and only 50 mins from Heathrow and Gatwick (rail-air links).

Seventh International Conference on Vision in Vehicles
World Trade Centre, Marseilles, France
14-17 September 1997

The Seventh International Conference on Vision in Vehicles is run in conjunction with the Applied Vision Association, the Ergonomics Society, the Association of Optometrists and with the participation of INRETS (Institut National de Recherche sur les Transports et leur Securite).

The conference will be held at the World Trade Centre in Marseilles which has modern facilities and is close to the famous Vieux Port. Marseilles is the second largest city in France and offers bustling night life. It has connections by air, train and road to the other major cities in France and also the rest of Europe.

Provisional Programme

Sunday 14th September 1997 - Lecture Theatre Europe 57

11.00-14.00 Registration - Entrance Hall

14.00-15.00 Keynote Lecture

Chair: I D Brown

An international perspective on vision in vehicles

J Breen

Executive Director, European Safety Council, Brussels, Belgium

15.00-15.30 Tea

15.30-17.00 Session 2: Drivers' Vision

Chair: S P Taylor

15.30 Vision - A behavioral optometric viewpoint

P Harris

Baltimore Academy for Behavioral Optometry, Baltimore, USA

16.00 Contribution to the ergonomical and ergophtalmological approaches of the visual adaptation of drivers

J.-J. Meyer, D. Francioli, H. Kerkhoven

Laboratoire d'ergonomie visuelle (LEV), Institut Universitaire Romand de Sante au Travail (IURST), Lausanne, Switzerland

16.30 How well does high contrast visual acuity predict driving performance?

J M Wood and K E Higgins

Centre for Eye Research, Queensland University of Technology, Brisbane, Australia

Monday 15th September 1997 - Lecture Theatre Europe 57

09.00-10.30 Session 3(a): Drivers' Vision II

Chair: S P Taylor

- 09.00 Vision, age, driving restrictions and road accidents
S V Slade & M C M Dunne
Vision Sciences, Aston University, Birmingham, UK
- 09.30 Drivers' Fatigue as Identified by Saccadic and Blink Indicators
N Galley, G Andrés & E Reitter
Psychological Institute, University of Cologne, Köln, Germany
- 10.00 Retinal adaptation under night-time driving conditions
S Plainis, K Chauhan, WN Charman & IJ Murray
Dept of Optometry, UMIST, Manchester, UK
- 10.30 *coffee*
- 11.00-12.30 Session 4(a): Foveal and Peripheral Task Performance**
Chair: C M Haslegrave
- 11.00 Parallel processing and interference in simultaneous foveal and peripheral task performance
G M J van de Klok & E C M van de Weijert
Department of Industrial Engineering and Design, Delft University of Technology, Delft, The Netherlands
- 11.30 Drivers' ability to acquire peripherally presented in-car information without focusing
L Nilsson, T Falkmer & S Samuelsson
Swedish National Road and Transport Research Institute (VTI), Linköping, Sweden
- 12.00 Effect of the retinal size and peripheral field restriction on speed perception of an automobile in a video scene
A Conchillo, L M Nunes & T Ruiz
Faculty of Psychology, University Complutense, Madrid, Spain
- 12.30 *lunch*
- 14.00-15.30 Session 5(a): Ageing**
Chair: P Smith
- 14.00 Ageing and the detection of collision events
G J Andersen, J Cisneros, A Saipour & P Atchley
University of California Riverside and University of Illinois, Champaign-Urbana, USA
- 14.30 A comparison between the sign recognition and driving performance of elderly drivers with multifocal and monofocal intraocular lens implants when they drove at night and in fog
J R Bloomfield, M J Bartelme, T L Brown & A R Grant
Center for Computer Aided Design, University of Iowa, Iowa City, USA
- 15.00 Older drivers' pedestrian detection times surrounding head-up versus head-down speedometer glances
R J Kiefer

General Motors North American Operations, Warren, Michigan, USA

15.30 *tea*

16.00-17.30 Session 6(a): Fatigue

Chair: A G Gale

- 16.00 Waking up at the wheel: accidents, attention and the time gap experience
P Chapman, R Ismail & G Underwood
Accident Research Unit, Department of Psychology, University of Nottingham, Nottingham, UK
- 16.30 Changes in central and peripheral vision before and after a simulated driving task
V Muzet, J Roge, C Jouny & A Muzet
CNRS - CEPA, Strasbourg, France
- 17.00 The effects of motivational and perceptual-based interventions on fatigue-related decrements in simulated driving performance
P A Desmond, G Matthews and P A Hancock
Human Factors Research Laboratory, University of Minnesota, Minneapolis, USA

Monday 15th September 1997 - Lecture Theatre Europe 93

9.00-10.30 Session 3(b): Road Transport Informatics

Chair: J A Rothengatter

- 9.00 Visual perception of HUD image in practical automobiles
S Okabayashi, N Sugie & T Hatada
Faculty of Urban Science & Informatics, Meijo University, Japan
- 9.30 Jaguar cars' near infrared night vision system - results of further research
P Barham
Cranfield University, UK
- 10.00 Visual and kinesthetic cues for driver's behavior regulation: basic results and application for the design of non-visual displays
B Färber, M Popp & J Schmitt
University of the Armed Forces Munich, Human Factors Institute, Neubiberg, Germany
- 10.30 *coffee*
- 11.00-12.30 Session 4(b): Intelligent Driver Support Systems**
- Chair:** C Berthelon
- 11.00 Heading control & Visual workload
A P de Vos, J Godthelp, J P Löwenau & R Haller
TNO Human Factors Research Institute, Soesterberg, The Netherlands
- 11.30 Computational and implementation strategies for smart visual sensors in automotive applications
F Solari, S P Sabatini & G M Bisio
Department of Biophysical and Electronic Engineering, University of Genova,

Genova, Italy

12.00 Towards predicting driver intentions from patterns of eye fixations
A Liu
Nissan Cambridge Basic Research, Cambridge, Massachusetts, USA

12.30 *lunch*

14.00-15.30 Session 5(b): Visual Scanning

Chair: A G Gale

14.00 Quantitative study of a car driver's eye scanning behaviour on a simulated highway context
P Simon, J-C Popieul, A Todoskoff & J-C Angue
Laboratoire d'Automatique et de Mécanique Industrielles et Humaines, Université de Valenciennes et du Hainaut Cambresis, Valenciennes, France

14.30 Effects of two different mental tasks in visual search behaviour while driving
M A Recarte, L M Nunes & R Lopez
Faculty of Psychology, University Complutense, Madrid, Spain

15.00 Can object recognition theories explain visual search failures at junctions?
M P Langham & G Hole
School of Cognitive Sciences, University of Sussex, Brighton, UK

15.30 *tea*

16.00-17.30 Session 6(b): Visual Steering Control

Chair: D Giguère

16.00 The visual control of steering and driving
G Underwood, P Chapman, D Crundall, S Cooper & R Wallén
Accident Research Unit, Department of Psychology, University of Nottingham, Nottingham, UK

16.30 Using a virtual environment to assess which cues affect driver steering performance
A Chatziastros, G M Wallis & H H Buelthoff
Max-Planck Institute for Biological Cybernetics, Tuebingen, Germany

17.00 Peripheral detection in novice and experienced drivers
D Crundall, G Underwood and P Chapman
Accident Research Unit, Department of Psychology, University of Nottingham, Nottingham, UK

Tuesday 16th September 1997 - Lecture Theatre Europe 57

9.00-10.30 Session 7(a): Speed & Distance Perception I

Chair: B Faerber

9.00 Speed and distance estimation under simulated conditions

*J A Groeger, O M Carsten & E. Blana
Department of Psychology, University of Surrey, UK*

- 9.30 Increasing safety by removing visual cues - a contradiction?
*F J JM Steyvers
Traffic Research Centre VSC, University of Groningen, Haren, The Netherlands*
- 10.00 The effects of reduced visibility and time pressure on drivers' distance keeping
behaviour
*M van der Hulst
University of Groningen, Traffic Research Centre, Haren, The Netherlands*
- 10.30 *coffee*
- 11.00-12.30 Session 8(a): Speed & Distance Perception II**
Chair: C M Haslegrave
- 11.00 A statistical detection model of looming perception
*E R Boer
Nissan Cambridge Basic Research, Cambridge, USA*
- 11.30 Updating visual space when rotating the head during whole-body displacements
*J Blouin, G M Gauthier & J-L Vercher
UMR CNRS Mouvement et Perception, Université de la Méditerranée, Marseille,
France*
- 12.00 Vehicle's movement detection: Influence of road layout and relation with visual
drivers assessment
*J Santos, P Noriega & P Albuquerque
Human Factors Unit, Laboratory of Psychology, Institute of Education and
Psychology, University of Minho, Braga Codex, Portugal*
- 12.30 *lunch*
- 14.30-16.00 Session 9: Perception of 'Time-to-Collision' I**
Chair: V Cavallo
- 14.30 Road environment and visual anticipation of a collision during self-motion
*C Berthelon, D Mestre & C. Nachtergaële
INRETS, Salon de Provence, France*
- 15.00 Virtually a bridge bash: the use of a virtual environment to evaluate driver
behaviour
*T J Horberry, A G Gale & F Bolarin
Applied Vision Research Unit, University of Derby, Derby, UK*
- 15.30 Time estimation in the time-to-collision task: the impact of a simultaneous
secondary task
*J A Groeger & S Comte
Department of Psychology, University of Surrey, UK*

Tuesday 16th September 1997 - Lecture Theatre Europe 93

09.00-10.30 Session 7(b): Visual Demand

Chair: H Summala

- 09.00 Definitions and metrics for the measurement of driver visual demand
M Fowkes and T C Lansdown
MIRA, Nuneaton, UK
- 09.30 Validation of a method for measuring car drivers' cognitive load. A simulator study
L Harms
Swedish Road & Transport Research Institute (VTI), Linköping, Sweden
- 10.00 The effect of cognitive organization of road scenes on actual driving behaviour
N A Kaptein & F M M Claessens
TNO Human Factors Research Institute, Soesterberg, The Netherlands
- 10.30 *tea*

11.00-13.00 Session 8(b): Visibility & Conspicuity

Chair: W Wierwille

- 11.00 Traffic signs, visibility and recognition
W Schneider H Derkum & A Sprenger
ASSeV, Cologne, Germany
- 11.30 Visibility assessment methods for earth-moving machines
F Hella & J-F Schouller
INRS, Vandoeuvre, France
- 12.00 Understanding the role of 'blind spots' around heavy goods vehicles: perception, measurement and 3D visualization
C Larue & D Giguère
IRSST Safety-ergonomics Research Program, Montréal, Canada
- 12.30 Conspicuity measurement, a new alternative to cumbersome search-time measurements
F Kooi & J Alferdinck
TNO Human Factors Research Institute, Soesterberg, The Netherlands

13.00 Lunch

14.30-16.00 Room Australie - Poster Session

The Development of the Eye Movement Strategies of Learner Drivers

D Dishart

Sussex Centre for Neuroscience Research, University of Sussex, Brighton, UK

Detection of Vehicle Crossing Path at Intersection

N Uchida, K Fujita & T Katayama

Japan Automobile Research Institute, Ibaraki, Japan

A technique for on-road assessment of road sign visibility distances

K Jones, J M Wood, M I Woolf & B E Bentley

School of Planning, Landscape Architecture & Surveying, Queensland University of Technology, Brisbane, Australia

Evaluation of road junctions by car drivers

S Dahlstedt

Swedish road and transport research institute (VTI), Linköping, Sweden

Driving performance when commuting via an automated highway system

J R Bloomfield, A R Grant, L Levitan, T L Brown & T L Cumming

Center for Computer-Aided Design, University of Iowa, Iowa City, USA

Improving driving competence of older persons with visual field defects

T R M Coeckelbergh, W H Brouwer, F W Cornelissen & A C Kooijman

Laboratory for Experimental Ophthalmology, University of Groningen, RB Groningen, The Netherlands

The role of environmental stimuli on driver's ability to maintain a constant velocity through restricted environments.

M P Manser, J Carmody & P A Hancock

Human Factors Research Laboratory, University of Minnesota, Minneapolis, USA

Looking for danger: drivers' eye movements in hazardous situations

P Chapman & G Underwood

Accident Research Unit, Department of Psychology, University of Nottingham, Nottingham, UK

A dual-task method to analyse driving behaviour

C Castro & F J Martos

Dpto Psicología Experimental y Fisiología del Comportamiento, University of Granada, Granada, Spain

The influence of external visual stimuli and internal factors on the ability to accurately estimate imminent collision

M P Manser & P A Hancock

Human Factors Research Laboratory, University of Minnesota, Minneapolis, USA

Artificial vision for an autonomous motorcycle

M Kourogi

Muraoka Lab, School of Science and Engineering, Waseda University, Tokyo, Japan

Localization of the eyes in human front faces by a neural network for the detection of car driver's hypovigilance states

B Decoux & S-G Lee

Laboratoire Capteurs, Instrumentation, Analyse, Institut National des Sciences Appliquées de Rouen, Mont-Saint-Aignan, France

Effects of gravito-inertial force and vision on driver and passenger head tilt during driving

D C Zikovitz & L R Harris

Depts Biology and Psychology, York University, Toronto, Canada

Validating a rural-roads-taxonomy by means of psychophysiology

T Wagner & P Richter

Dept of Work, Organizational and Social Psychology, Dresden University of Technology, Dresden, Germany

The driving task demand : an index representative of the driver's behaviour

A Todoskoff, J.-C Popieul, P Simon & J.-C Anguf

*Laboratoire d'Automatique et de Mécanique Industrielles et Humaines - URA CNRS 1775
Université de Valenciennes et du Hainaut-Cambresis, Valenciennes, France*

A comprehensive evaluation of fluorescent retroreflective traffic control devices based on human factors and traffic engineering data

G D Jenssen & B Brekke

SINTEF Civil and Environmental Engineering, Norway

Functional field of vision and road environment complexity

A Pottier

LPC-INRETS, Arcueil, France

Computer-aided visualisation for behaviour of vehicle glass components

Q Auger

Centre de Développement Industriel, Saint Gobain Vitrage, Thourotte, France

Glare mitigation in night-driving using partially tinted lenses

A K Aleksander & N C Ellis

Aleksander and Associates, Boise, Idaho, USA

Typical sequences of fixations while driving turns

M Chmielarz, J Churan & W Schneider

ASSeV, Cologne, Germany

Effects of double images in windscreens

A Sprenger, M A Beeck, M Chmielarz, J Churan & W Schneider

ASSeV, Cologne, Germany

Changing The Velocity Of The Vehicle As A Method To Decrease The Predictability of the Visual Stimulation While Driving

P Tejero, M Cholz & S Bayarri

Instituto de Trafico y Seguridad Vial, Universidad de Valencia, Spain

Visibility of variable message signs in fog

M Colomb, M G Legoueix, M Smith, M. Aston & T L Williams

LRPC de Clermont-Fd, France

Wednesday 17th September 1997 - Lecture Theatre Europe 57

09.30-11.00 Session 10(a): Perception of 'Time-to-Collision' II

Chair: C M Haslegrave

09.30

Distance over-estimation of vehicle rear lights in fog

V Cavallo, J Doré, M Colomb & G Legoueix

INRETS-Laboratoire de Psychologie de la Conduite, Arcueil, France

10.00

Close following on the motorway: Initial findings of an instrumented vehicle

study

M McDonald, M A Brackstone, B Sultan & C Roach

*Transportation Research Group, Dept of Civil & Environmental Engineering,
University of Southampton, UK*

10.30 Detection thresholds in decreasing headway situations: Effects of driving
experience and loci of attention

D Lambie, M Laakso and H Summala

University of Helsinki, Helsinki, Finland

11.00 *coffee*

11.30-12.30 Keynote Lecture:

12.30 Conference Overview

13.00 Close of Conference

Wednesday 17th September 1997 - Lecture Theatre Europe 93

09.30-10.30 Session 10(b): Route Guidance Systems

Chair: T Miura

09.00 Visual demands of an aided vs. an unaided navigation task in real traffic

M Kopf

Vehicle Research Department BMW AG, München, Germany

09.30 Voice control systems for handling of route guidance, radio and telephone in
cars: results of a field experiment.

B Faerber, B Faerber & G Meier-Arendt

*University of the Armed Forces, Munich, Human Factors Institute, Neubiberg,
Germany*

10.00 Combining dynamic route information systems with other types of signs

W H Janssen and M H Martens

TNO Human Factors Research Institute, Soesterberg, The Netherlands

Close of Conference

For More information contact:

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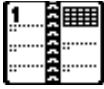
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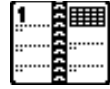
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References supplied (as usual!) by:

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Meetings Calendar



1997

- May 11-16 *ARVO* Fort Lauderdale, USA
<http://www.faseb.org/arvo/>
- July 5-9 IRGCVD 14th meeting, Ghent, Belgium
email: coa09@keele.ac.uk
<http://orlab.optom.unsw.edu.au/IRGCVD/>
- August 24-29 ECVP Helsinki-Espoo, Finland
email: ecvp97@helsinki.fi
<http://www.psych.helsinki.fi/ecvp97>
- September 4 *AVA meeting on depth perception.*
University of Surrey.
email: M.Bradshaw@surrey.ac.uk
- September 14-17 *Vision in Vehicles 7*, Marseilles, France.
Contact: 01332-622287,
email: avru@derby.ac.uk
- November 5 *AVA postgraduate meeting.*
College of Optometrists, London.
Contact: 0171 373 7765
- November 19-20 Brain mechanisms of selective perception and
action. The Royal Society, London.
<http://www.royalsoc.ac.uk/rs/>