

Centre for Cognitive Ageing and Cognitive Epidemiology



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Nobel Prize Winner Dr James Watson visits CCACE

The Centre was privileged to welcome Dr James D. Watson on 6th October. Dr Watson spent the morning at the centre, meeting with Centre Director, had a question and answer/discussion session with centre research fellows and staff before going on to discuss their research in more detail. Asked what piece of advice he would give a young scientist he replied that the best thing is “to be in at the start of something and that’s what you’ve got here”. It didn’t escape our notice that this was coming from a man who had most definitely started something that he remains active in to this day. After some animated discussion on intelligence, the professor signed copies of his 1953 paper with Francis Crick that first described the double helical structure of DNA.



Disconnected Mind Celebrity Event

On Sunday 22nd November, at the Trafalgar Studios Theatre 2 in London, Ian Deary and Karen Horsburgh were the scientific hosts for an all-star celebrity performance in aid of their Disconnected Mind research project, which is funded by Age UK (formerly Help the Aged and Age Concern). The small studio theatre was taken over for the night by Age UK, and the audience was a group of Disconnected Mind supporters and other interested individuals. The stunning performance was a one-off event. Organised by Simon Callow, it involved him and seven other well-known British actors reading transcripts of people with dementia talking about their lives. The accounts were taken from David Clegg’s 2005 book Ancient Mysteries. The readings brought out the deep poignancy, life histories, and humour that people with dementia achieve in their talk. It also made people in the audience reflect on the importance of memory and the enormous value of each person’s life story. Inevitably, many of the accounts dealt in some detail with aspects of the



Images courtesy of Age UK.

Second World War. Apart from Simon Callow, the actors reading the accounts were (left to right) Brigit Forsyth, Richard Wilson (who also took part as a subject in the Scottish Mental Survey 1947), Brian Cox, Richard Briers, Linda Robson, Julia Mackenzie and Tony Robinson. Among the audience was actress Siân Philips. Ian and Karen were somewhat star-struck by the line-up! The reception following the two-act performance involved them in the unusual ‘scientific’ activity of having to make conversation with actors they had seen over many years in favourite television programmes and Hollywood films. Ian said,

“The Disconnected Mind team’s members are very grateful to Age UK and Simon Callow for organising such a super event. The conversations with actors and audience brought home how much people value what we are doing.”

Schools getBALANCED with CCACE and Edinburgh Neuroscience



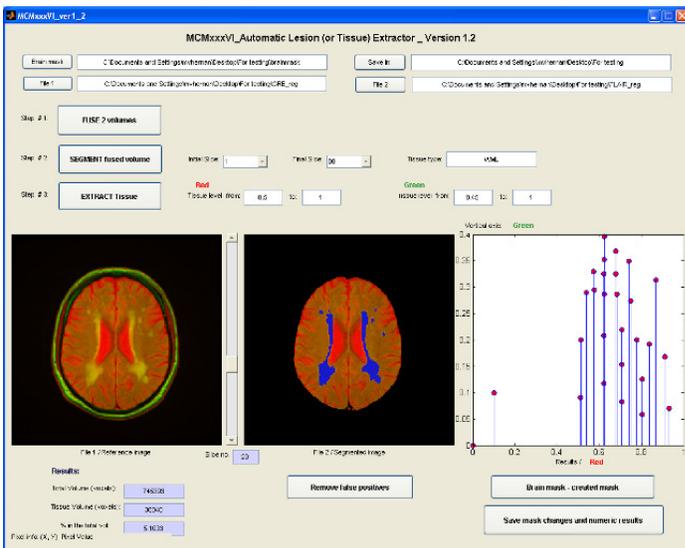
CCACE is leading a series of 21 schools workshops in collaboration with Edinburgh Neuroscience called getBALANCED. The workshops, led by CCACE Co-director John Starr and developed by CCACE researchers will tour 6 schools between November 2009 and February 2010. The first three workshops presented to S3 pupils were held at St Augustine's R C High School. CCACE received a warm welcome from the staff and pupils, with 98% of pupils rating the workshop overall good or excellent.

The workshop is based on the theme of balance in the brain and body structures and investigates this using reaction time, a laterality test, finger symmetry and fingerprinting exercises. Speaking about the workshop pupils commented "it was interesting to learn about the brain" and a "really good way to spend double biology". Ken McDonald, Principal Biology Teacher, St Augustine's High School commented "My class spent the next lesson enthusiastically discussing the workshop and their brains in general. One gave a talk to the class about how her epilepsy affects her life". Robin Morton, who is co-ordinating the workshops on behalf of the centre said "this is a fantastic opportunity for CCACE to tell people about the work we do and what makes it so interesting. I am grateful to all those from CCACE and Edinburgh Neuroscience for their efforts in putting this together and running the workshops". If you would like to help run the workshops please contact robin.morton@ed.ac.uk.



Emily Petrides who is doing an MSc in Translational Medicine talks to a pupil about body & brain symmetry.

MCMxxxVI Imaging Software for Measuring Brain Volume Biomarkers



Maria Valdes Hernandez (CCACE member) presented a new imaging software package at the SICSA DEMOfest at the School of Informatics on the 24th November. She was demonstrating 'MCMxxxVI (1936): A New Versatile Automatic Technique for Measuring Volume Biomarkers in the Ageing Brain', Maria has developed the software (see screenshot) for tissue and lesion segmentation of white matter lesions and is using this in the Disconnected Mind project. The software will be open source and available for downloading from www.sbirc.ed.ac.uk in December under the Apache License version 2.0, Jan 2004.

CCACE Pilot Imaging and Travel Funds

The centre has recently funded three pilot imaging projects totalling £26,146. Congratulations to Ian Marshall, Alixe Kilgour and Alexa Morcom, who will lead the projects. The centre has also awarded £900 to Professor Tim Bates to develop CCACE teaching materials in structural equation modelling.

The Centre has funding for pilot research studies in brain imaging and/or genetics: £52,500 per year for brain imaging pilot studies; £26,200 per year for genetic pilot studies over three years from Oct 2008 until Sept 2011. These funds are available to CCACE members only to support the development of new methods and to develop novel pilot findings, with the aim that the work will lead to applications for larger research grants to expand on the pilot findings. The pilot studies should be relevant to some aspect of cognition and ageing and will hopefully encourage new collaborations between CCACE members who have not previously worked together. Applications from less established researchers and for projects that

cross CCACE research groups are particularly encouraged. Applications are open all year round and are allocated on a first come first served basis for approved applications. For more information log in to the member area at www.ccace.ed.ac.uk and click on CCACE Funding Opportunities.

Funding News

£1.5million to Investigate DISC1

David Porteous, Kirsty Millar and David Wyllie were awarded 4 year MRC grant "DISC1 complex, Neurosignalling and genetics" to continue work on the genetics and neurobiology of DISC1 (~£1.5M).

CCACE Receives a College Knowledge Exchange Award

CCACE has been awarded £3,164 from the College of Humanities and Social Science Knowledge Transfer Grant for a collaboration with artist Linda Kosciwicz-Fleming. The project titled Transformation: Life Portraits aims to stimulate new ways of thinking about changes in lifetime mental function. This will be achieved through production of new digital artwork and a workshop event in 2010 which will explore the science, cultural, social and economic issues surrounding lifetime intellectual function and *successful ageing*. Linda will work with the Lothian Birth Cohort team and research participants.

On hearing the news Linda said "I am delighted to have the opportunity to create new artwork for the project Transformation: Life Portraits and can't wait to get started. I am fascinated by how the individual identities of people from the human cohorts inform the scientific examination and research and vice versa." Linda, who also works as a Policy Manager with Historic Scotland, is currently showing artwork at the RSA Annual Exhibition and the Edinburgh Printmakers Winter exhibition.



Linda Kosciwicz-Fleming,
Digital Artist

Teaching/Training

2009/2010 MSc in Cognitive Ageing and Cognitive Epidemiology

CCACE has begun teaching on the CCACE MSc module in Cognitive Ageing and Cognitive Epidemiology. Now in its second year this 10 week course involves 10 researchers from the Centre who each give a 2 hour lecture. Numbers on the course have more than doubled this year to 33. This course is also a core module for students who hold the CCACE PhD studentships.

CCACE PhD Studentships Starting September 2010

Applications for the next round of CCACE PhD studentships starting in September 2010 have now opened. Two fully funded 1+3 PhD studentships are available in the area of brain and cognitive ageing. The full advert detailing possible projects and the application form can be found on the CCACE website home page (www.ccace.ed.ac.uk). The deadline for applications is 26th February 2010.

Talks

CCACE Director speaks at the National Forum on Ageing

Ian Deary was invited to address the National Forum on Ageing at an event titled Enabling Independent Healthy Ageing. Held on 3 November 2009, this event was hosted by the General Register Office for Scotland and the Scottish Government to showcase existing research relating to independent healthy ageing, to inform the development and delivery of public policy. Ian's talk was well received. Several of the attendees spontaneously commented on the talk and the research informed subsequent round-table discussion on the theme of independent healthy aging. To find out more about the National Forum on Ageing see: <http://tinyurl.com/yhjdttq>. Ian also presented the Centre's work at a recent major MRC Strategy day, to decide their future funding of neuroscience and mental health.

International Society for Intelligence Research, Madrid

Beverly Roberts is presenting at ISIR (International Society for Intelligence Research) in Madrid in December as part of a symposium with Ian Deary, Michelle Luciano, Lars Penke and Wendy Johnson. The symposium is entitled Cognitive Ageing and Cognitive Epidemiology and the title of her talk is "Reaction time and established risk factors for total and cardiovascular disease mortality: Comparison of effect estimates in the follow-up of a large, UK-wide general population based survey".

Scotland's Science and Innovation - Past, Present and Future

On September 29th 2009, The CCACE Group Leader Professor Joanna Wardlaw, and the SINAPSE Coordinator Dr Janet De Wilde were invited to a reception at Edinburgh Castle to celebrate Scotland's Science and Innovation - Past, Present and Future. This was attended amongst others by the First Minister Alex Salmond, Cabinet Secretary for Education and Lifelong Learning Fiona Hyslop, and Chief Scientific Adviser for Scotland, Professor Anne Glover. Along with colleagues from other SFC funded Research Pools, SINAPSE, on a joint stand helped showcase Scotland's strengths in collaborative scientific research. To see a video highlighting Scottish Science & Innovation created for the event visit <http://tinyurl.com/yh6g5d2>.

CCACE Group Leader Professor Bob Logie presented a talk at the Annual Psychonomics Society Meeting in Boston, titled 'Multitasking for breakfast in middle age: Challenges for prospective and working memory' by Robert Logie, Jack Nissan, Felicia Fiore, Steve Trawley and Anna Law. The Annual Psychonomics Society Meeting attracts around 2000 experimental psychologists and takes place in a different USA or Canadian City in November every year. The only time in its 50 year history that The Psychonomics Society has met outside of North America was for a meeting that Professor Logie organised in Edinburgh in 2007.

Other Centre News

CCACE Group Leader David Porteous elected to Membership of EMBO (European Molecular Biology Organisation) which promotes excellence in molecular and life sciences in Europe.

CCACE Group Leader David Batty was a judge for the Institute of Ideas Debating Matters Competition which was sponsored by Pfizer, the Wellcome Trust and the MRC http://www.debatingmatters.com/events/gr/glasgow_2009_10/

Publications & Press Coverage

CCACE co-Director in the News

CCACE Co-Director Jonathan Seckle recently published an article on the effects of a mothers liquorice consumption on their child's intelligence and behaviour. The article which appeared in the *American Journal of Epidemiology* (170(9):1137-1146) showed that pregnant women who eat large amounts of liquorice could negatively affect their child's intelligence and behaviour.

The study was conducted in Finland, where consumption of liquorice is common. Glycyrrhizin which is found in liquorice may impair the placenta by allowing glucocorticoid stress hormones to cross from mother to impair foetal brain development.

The results suggested that women who ate more than 500 mg of glycyrrhizin per week (equivalent of 100 g of pure liquorice) were more likely to have children with lower intelligence levels and more behavioural problems. The eight-year-old children of women who ate a lot of liquorice when pregnant did not perform as well as other youngsters in tests of vocabulary, memory and spatial awareness. The eight-year-olds were also more likely to have poor attention spans and show disruptive behaviour such as attention deficit hyperactivity disorder (ADHD).

Professor Bob Logie on Radio 4

Professor Bob Logie will appear on the Radio 4 programme 'All in the Mind' on Tuesday 8th December (repeated on Wednesday 8th December). On the programme Professor Logie discusses with Dr Tracy Alloway (Stirling) whether working memory can replace IQ as a predictor of academic attainment in children.

The screenshot shows a BBC News webpage. The main headline is "Warning on liquorice in pregnancy". The sub-headline reads: "Pregnant women who eat large amounts of liquorice could negatively affect their child's intelligence and behaviour, according to research." Below the text is a photograph of a bowl of liquorice candies. A caption under the photo states: "Eating 100g of pure liquorice a week could affect a child's development". The article text continues: "Experts from Edinburgh and Helsinki universities studied eight-year-olds born in Finland, where consumption of liquorice among young women is common. The children of women who ate a lot of liquorice when pregnant did not perform as well as other youngsters in tests. Researchers said a component in liquorice may impair the placenta". At the bottom of the article is the URL: http://news.bbc.co.uk/1/hi/scotland/edinburgh_and_east/8292392.stm

Special Issue of *Intelligence on Cognitive Epidemiology*

A special issue (edited by Deary) on Cognitive Epidemiology has appeared in the journal *Intelligence* (37:6, 517-634). Amongst the papers which appeared was by Ian Deary, Catharine Gale, Marlene Stewart, Gerald Fowkes, Gordon Murray, David Batty & Jacqueline Price which examined whether verbal intelligence is associated with persisting to take medication. The study found that higher verbal intelligence was associated with a greater likelihood of continuing to take medication up to two years after randomisation.

Type 2 Diabetes and depression.

Two recent papers have investigated the relationship between diabetes and depression. In the first Gale *et al.* 2009 (*Biol Psychiatry*, Online 5 Nov 09) showed that men with undiagnosed type 2 diabetes had nearly double the odds of major depression compared with those with normal fasting glucose. Men with diagnosed diabetes had triple the odds of major depression after adjustment for confounding variables. These findings suggest that the positive association between type 2 diabetes and depression extends beyond those who are aware they have the disease. In a second paper Kivimaki *et al.* 2009 (*Diab Care*, 32(10):1867-1869) found a U-shaped association between blood glucose and the Center for Epidemiologic Studies Depression scale (CES-D), with the lowest depression risk seen among those in the normoglycemic range of A1C. This does not support the hypothesized protective effect of hyperglycemia.

Using the CCACE Core Staff

Support staff

Scientific Administrator/Researcher: Dr Beverly Roberts, 7 George Square (beverly.roberts@ed.ac.uk)

Administrative secretary: Mrs Ann Sim, 7 George Square (anna.sim@ed.ac.uk)

Knowledge Transfer Officer: Dr Robin Morton, 7 George Square (robin.morton@ed.ac.uk)

Database Manager: Mr Dave Liewald, 7 George Square (dave.liewald@ed.ac.uk)

Scientific staff

Statistician: Dr Mike Allerhand, 7 George Square (michael.allerhand@ed.ac.uk)

Geneticist: Dr Sarah Harris, Western General Hospital/7 George Square (sarah.harris@hgu.mrc.ac.uk)

Genetic Statistician: Dr Andy MacLeod, Western General Hospital/7 George Square (andrew.macleod@ed.ac.uk)

Technical staff

Human Testing Technician: Mr Jack Nissan, 7 George Square (jack.nissan@ed.ac.uk)

Brain Imaging Development Technician: Miss Natalie Royle, Western General Hospital (nat.royle@ed.ac.uk)

Animal Development Technician: Miss Sarah Caughey, New Royal Infirmary Edinburgh (email account still to be assigned)

If you have a project or grant application that would benefit from the skills offered by any of the CCACE core staff please contact them directly or e-mail ccace@ed.ac.uk.

Dates for your diary

10th March 2010 from 2 - 5 pm. Department of Psychology, 7 George Square.

CCACE Members Only Strategy Meeting followed by a drinks reception. The meeting is designed to give CCACE members the opportunity to chat to other members and hopefully form useful collaborations for future work but also to have general discussions on what the Centre could do in the next year.

7th April 2010. Time and venue to be confirmed.

Professor John O'Brien, Institute for Ageing and Health, Newcastle University.

15th January 2010, 9 am – 5 pm. Edinburgh PC Lab, Hugh Robson Building, University of Edinburgh.

The 2010 SINAPSE fMRI WORKSHOP run by Dr Cyril Pernet. See www.sinapse.ac.uk/

Contact and news

If you have any news, planned events, new research grants, new prominent research papers, or media coverage of your work — or anything you want to tell us about — then please send the details to Robin Morton (robin.morton@ed.ac.uk) and we will include it in future Centre Newsletters.