Welcome to the new CCACE e-bulletin. This aims to keep you up-to-date with the latest news from CCACE.

The Disconnected Mind on the One Show

Dr Sarah Jarvis from BBC's The One Show spent a day with The Disconnected Mind research team, learning more about the LBC1936 project and meeting some of the participants. Ian Deary and Alan Gow were on hand to talk about the background of the project and the current aims. The participants who were filmed were very interested to see behind the scenes of how a 4.5 minute piece is put together. The BBC team were impressed with the project, and were very interested in what they saw at the Wellcome Trust Clinic Research Facility and the SFC Brain Imaging Research Centre. They're currently in the editing suite, and the piece is expected to be shown on the programme later in the year; more details will follow nearer the time.

Filming at the LBC1936 Clinic

College Funds CCACE Symmetry Lab

Centre members Lars Penke, Tim Bates and Ian Deary were recently successful in securing College infrastructure funding for £76,000 to establish a Symmetry Lab in 7 George Square. This lab, which will be endowed with two high-tech optical 3D scanners for the face and the full body, will be mainly used to assess fluctuating asymmetry, a putative indicator of developmental stability that has been shown to relate to cognitive ability, cognitive ageing and various health outcomes. While fluctuating asymmetry proved to be difficult to measure precisely in previous studies, the new lab will allow us and other CCACE members to measure symmetry more accurately, more comprehensively, and quicker than any study has done to date.

Optical 3D Scan Images

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Early Detection of Alzheimer's Disease

A City for All Ages Seminar "Healthy Mental Ageing"
30 June 2010
10.30am – 12.30pm
City Chambers
Edinburgh
CCACE Presents Art Exhibition

On 22 and 23 April, CCACE presented new artwork by the artist Linda Koscieicz-Fleming at the Inspace Gallery in Edinburgh. Linda used photographs of four members of the Lothian Birth Cohort 1936 to create a series of group and individual portraits. Four videos showing the series of still images were projected side by side while a 1936 recording of Billie Holliday singing ‘Pennies from Heaven’ played to over 200 visitors.

The theme of the workshop was ageing, its meaning, importance and how CCACE can contribute to science and society through research on the ageing body and ageing mind. Linda explained to the workshop participants that she had picked the themes of body and facial movement because she felt them to be fundamental indicators of a healthy mind and body. Her own mother had suffered from dementia and she noticed subtle differences in her mother’s movements and expression.

The workshop attendees were an eclectic mix including researchers, interest groups, artists and members of LBC1936. This led to lively and positive discussion about ageing and the work of CCACE. The Transformations: Life Portraits exhibition has proved itself to be a thought-provoking and entertaining way of engaging the public and other interest groups in ageing, of challenging negative stereotypes and of celebrating the participants’ indispensible contributions to a ground-breaking research project.

CCACE Workshop on Working Memory in Healthy and Pathological Ageing

Professor Robert Logie hosted a CCACE sponsored workshop focussing on the key cognitive ability known as working memory (see box) from 30 - 31 March 2010. Over 70 CCACE members and affiliates attended a series of 12 talks from some of the most active and productive researchers internationally on the cognitive psychology of ageing. Speakers included Professors Alan Baddeley (York), Fergus Craik (Toronto), Nelson Cowan (Columbia, Missouri) and Karen Mitchell (Yale), along with members of CCACE including Professors Sergio Della Sala and Alasdair MacLullich. Talks covered capacity changes and changes in stress hormones with age, the effects of middle age on everyday multitasking, theory of mind and reflective attention, and whether or not brain training can offset cognitive ageing. Other talks considered possible cognitive markers of the early stages of Alzheimer's disease, and what amnesic patients can remember as well as why they forget.

Additional, half-day satellite meetings took place during which groups of PhD students and Post-docs within CCACE spoke about their work with three of the external speakers. The meeting was stimulating scientifically and demonstrated how a range of approaches can be used to understand the sparing and impairments associated with this crucial aspect of everyday functioning.

Working memory refers to the human ability to deal with moment to moment activities, keeping track of recent, current and intended thoughts and action. It is core to successful independent functioning, but is known to decline in healthy ageing and to be impaired as a result of neurodegenerative diseases.
Edinburgh Science Festival 2010

CCACE increased its presence at the Edinburgh International Science Festival this year with three separate activities. Thanks to all those who volunteered to help at these events.

Public Lecture on Personality

Ian Deary delivered a sell-out lecture to 200 attendees called “Ten things I hate about your personality… and mine.” In it, he focussed on the five factor model of personality. He described individual differences in the five personality traits of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. These differences originate and the effects they have on people’s life-long health and wellbeing, including associations between personality and mortality.

After the one hour talk Ian encouraged people to stay behind and a large number of people asked questions and discussed more about personality with him for almost an hour. Many of the audience had taken the CCACE on-line personality test before coming to the lecture (https://www.ccace.ed.ac.uk/ipip50.dll).

Stay Sharp! @ Discover Science

At the National Museum of Scotland CCACE presented Stay Sharp! This interactive exhibit looked at how our brains change as we get older; how CCACE scientists study this in the Lothian Birth Cohort. Children tried out some of the tests and even did some genotyping using no more than a clothes line and some clothes pegs!

What are Scientists Made of? The Same as You!

CCACE also supported the Medical Research Council lab at the City Arts Centre. The CCACE activity introduced children to mind-body associations and take part in a real experiment while taking part in four linked activities: reaction time, body symmetry, grip strength and handedness.

International Collaboration uses Memory Binding Task to Identify Familial Alzheimer’s Disease 10 Years Early

CCACE members Professor Sergio Della Sala, Professor Robert Logie, Dr Sharon Abrahams and associate researcher Dr Mario Parra have been collaborating with the Neuroscience Group of the University of Antioquia, Colombia, to investigate a new short-term memory binding task, in familial AD. This task has detected memory changes in carriers of the gene mutation E280A more than 10 years before they become demented. The team has shown that Alzheimer patients have difficulty in remembering the link between simple shapes and their colour. Healthy people of the same age had no difficulty with this short-term memory task.

The usefulness of this task to investigate potential candidates for clinical trials as well as the effectiveness of anti-AD therapies was acknowledged at a collaborative meeting with the Banner Alzheimer’s Institute from Arizona, US and recently reported in the New York Times (http://tinyurl.com/2w8onxb). CCACE associate researcher Dr Jennifer Foley has been asked by the Alzheimer’s Society to present on memory binding at the UK Dementia Congress (Bournemouth, 9-11 November 2010; http://www.careinfo.org.uk/congress/).
CCACE Co-sponsors Debates on Neuroimaging

CCACE is co-sponsoring a series of debates to explore the ethical impact of neuroimaging on society. The series called “Brain Imaging and Society - what are we thinking and who has a right to know” is taking place at the Institute for Advanced Studies in Glasgow. Neuroimaging has advanced such that functional magnetic resonance imaging can reveal explicitly an individual’s thought patterns. This raises ethical and practical questions that society needs to address e.g. Who should see our brain images? Should neuroimaging be used as evidence in court, in commerce, or by governments? By stimulating debate and gathering opinion between the general public, societal groups (patients, prisoners), scientists, clinicians, ethicists, legal experts and politicians, this programme will raise awareness of privacy and ethical issues, determine a cross-section of opinion, and through engagement of users and policy makers, publish reports to guide policy outcomes.

There is an online survey to find out what the lay public think about uses of neuroimaging. The survey can be found at http://tinyurl.com/32dlho4

The next event is a Brain Imaging: Conversation Cafe is on Friday 25th June 11.00 am - 3.30 pm at the Institute for Advanced Studies.

The first two debates on imaging and law received good coverage in the press http://tinyurl.com/3xfd45s

More information, including videos of previous talks and links to media coverage can be found at http://www.sinapse.ac.uk/media/events/ias.asp.

The Implications of Cognitive Epidemiology on Public Health

CCACE and the NHS Health Scotland Public Health Science Directorate held a joint meeting on Cognitive Epidemiology on April 29th. Dr Laurence Gruer, Director of Public Health Science, NHS Health Scotland hosted the seminar in a meeting room at the Glasgow Royal Concert Hall.

CACCE researchers Ian Deary, David Batty, Catharine Gale presented on a series of subjects relating intelligence to health behaviours, mental health and causes of death and the public health implications of cognitive epidemiology. The speakers closed the workshop by taking questions, which led to active discussion on the public health implications of the findings, and whether it was possible to develop interventions based on them.

Professor Ian Deary described the meeting as “successful and positive; it was gratifying to see such interest in what Centre members were doing”. This meeting will be followed up in 2011 by a meeting on Cognitive Ageing. As a result of this meeting Professor Ian Deary has been asked to address the Scottish Government on the work of the Centre and its relevance to health.
Professors Porteous and Deary each presented at the 4th May site visit by Sir Mark Walport and senior Wellcome Trust staff to the Wellcome Trust Clinical Research Facility at the Western General Hospital. Work from CCACE, Generation Scotland and the Genetics Core were all highlighted and generated a lot of interest and support. The visit also gave an opportunity for Professor Porteous to set out the vision for the future of the Genetics Core which has supported CCACE work over many years and to summarise the Capital Equipment bid he is leading for to the Wellcome Trust. If successful, this would bring next generation sequencing capacity to the Genetics Core. A funding decision is expected in October.

Professor Porteous is leading a bid to the MRC, supported by the Director Professor Deary and others, for a Genome Wide Association Study of 10,000 subjects within the Generation Scotland: Scottish Family Health Study. A decision is expected in late July. If successful, this will create a fantastic opportunity for CCACE analysis and downstream studies and the cohort has been phenotyped using identical cognitive measures used in core CCACE projects such as the Lothian Birth Cohort of 1936.

Following internal review, Professor Porteous is leading a bid to the Wellcome Trust, supported by Professors Deary, Jonathan Seckl and others, for a new 4 year PhD studentship programme under the title “Systems Medicine Edinburgh: translating blue skies research into personalised biomarkers and smart drugs”. The programme fits squarely within the theme “Maximising the health benefits of genetics and genomics”. By design, this programme also relates to “Understanding the brain” (particularly gaining new insights into mental health disorders) and “Investigating development, ageing and chronic disease” (characterising physiological processes in disease; understanding chronic disease at the individual and population levels). A funding decision is expected this Autumn.

Congratulations

Congratulations to Dr Kathy Evans, CCACE affiliate, who has been appointed a non-clinical senior lecturer in the School of Molecular and Clinical Medicine. Kathy will continue to be based in the Medical Genetics Section and the Molecular Medicine Centre, Institute of Genetics and Molecular Medicine, Western General Hospital, but looks forward to working with colleagues in CCACE to explore how her work on genes related to bipolar disorder and schizophrenia also bear upon cognition and the normal ageing process.

Low IQ Link to Attempted Suicide

In a recent article in the British Medical Journal, CCACE Group Leader Dr David Batty and colleagues have shown that Low IQ scores in early adulthood are associated with an increased risk of attempted suicide in men, according to new research from the University of Glasgow.

Medical records of over one million men in Sweden were studied dating back twenty four years and rates of hospital admission for attempted suicide were compared against IQ scores.

Out of a cohort of 1.1 million men with IQ measured in early adulthood, almost 18,000 had been admitted to hospital at least once for attempted suicide.

Dr Batty and colleagues suggest a number of possible explanations for the association including social and financial disadvantage, poor health behaviours an individual’s ability to deal with stressful circumstances poorer problem-solving abilities and lower ability to talk about and share emotion. Such knowledge would help inform public health strategies and provide help and support for vulnerable groups." Hear more from Dr Batty in a recent BMJ Podcasts http://tinyurl.com/3273wc9 (from 5 m 36s).
CCACE Collaborates with Edinburgh City Council

CCACE and Edinburgh City Council are collaborating through their A City for All Ages Initiative. A City for All Ages (ACFAA) is Edinburgh's Joint Plan for Older People. It aims to improve opportunities and services for older people, removing discrimination and overcoming barriers. The Plan is a joint arrangement between The City of Edinburgh Council, NHS Lothian and the voluntary and commercial sectors. Through this collaboration CCACE will feed in to the Council's strategy on older people. CCACE will present at ACFAA Seminar entitled “Healthy Mental Ageing” in the Main Council Chamber at Edinburgh City Chambers on Wednesday 30 June 2010 (10.30 am – 12.30 pm; refreshments from 10.00 am). This event will highlight recent developments at CCACE and in the Disconnected Mind project which aims to identify key risk factors that lead to cognitive decline and associated with successful ageing. This seminar will give participants the opportunity to hear about the studies’ results and ask questions about wider issues in healthy mental ageing. The event will include photographs from the Transformations Life Portraits exhibition, highlighted on page 2. Places are limited, click here for details. To book please contact Elizabeth McGhee on 0131 469 3876 (elizabeth.mcghee@edinburgh.gov.uk).

Follow CCACE in 140 words or less at: http://twitter.com/ccace

CCACE attends Age Scotland launch of report:
Older People, Public Policy and the Impact of Devolution in Scotland http://tinyurl.com/2wnrakz

Professor Bob Logie, CCACE Group Leader speaks to Fred MacAulay about multi-tasking.
http://tinyurl.com/3436zr7 (expires 17 June)

Link identified between lower IQ scores and attempted suicide in men. Study by CCACE group leader David Batty. http://tinyurl.com/3732yqq

CCACE researcher Mario Parra talks about memory binding in the New York Times.
http://tinyurl.com/2w8onxb

Mike Wade writes about Transformations LIFE PORTRAITS in The Times:
http://tinyurl.com/2wgxp5g

Transformations LIFE PORTRAITS. An Exhibition at Inspace Gallery, 22 April, 12 - 8 pm.
http://www.ccace.ed.ac.uk/transformations/

The deadline for the CCACE organised British Society for the Psychology of Individual Differences conference is tomorrow! http://www.bspid.org.uk/

CCACE member Lorna Houlihan competes in I'm a Scientist, Get me out of here!
http://genes.imascientist.org.uk/profile/lorna/

BBC coverage of blood clotting story at http://tinyurl.com/39q7stu

Study pinpoints genes that keep watch on time blood takes to clot. http://tinyurl.com/ygxxlqg

Read about CCACE in the Edinburgh Evening News http://tinyurl.com/ygbjhr0

Hear Ian Deary on BBC Radio 4's Am I Normal?
http://tinyurl.com/ykrme4r

DISC1 Conference

Professors Porteous, Blackwood, St Clair and Dr Millar are hosting a DISC1 meeting in Edinburgh from 3rd-6th September 2010. The aim of the meeting is to provide an opportunity to share latest findings, discuss and plan future studies and thus push the field forward. More information at www.disc2010.org
CCACE Calling

On May 26th – at a quarter to one in the morning – Ian Deary gave a talk to the Longevity Consortium in Washington DC on the work of the Centre: from his office in Edinburgh! The Longevity Consortium is supported by the NIH in America, and was keen to hear about the work of CCACE. They invited Ian to give the opening keynote talk. Ian was unable to attend in person. However, Dave Liewald, the Centre’s IT wizard, set up a web-based process allowing Ian to be seen and heard – along with his slides – at the meeting. The lecture covered the work that the Centre has done on how intelligence from early life is associated with mortality, morbidity, and health behaviours throughout the rest of life. The audience responded well, with 25 minutes of questions. Although such web-meetings will not take the place of one-to-one meetings and networking, this was a useful resource for the Centre, and an exciting new way of delivering a lecture, while avoiding jet-lag!

Dates for your diary

30 June 2010 A City for All Ages Seminar "Healthy Mental Ageing"
10.30 am – 12.30 pm. Main Council Chamber, City Chambers, High Street (Refreshments will be available from 10.00am and a buffet lunch will be provided at 12.30 pm)

7th September 2010. 3rd ANNUAL RESEARCH DAY
1.00 pm – 5.00 pm (followed by wine reception). Open to all. Room F21, 7 George Square, Edinburgh. KEYNOTE LECTURE 1.30 pm ‘The changing role of genes in cognitive ageing’ Professor Nancy Pedersen, Department of Medical Epidemiology and Biostatistics, Karolinska Institutet.

30th November 2010. ST ANDREWS DAY LECTURE
‘Cognition and the Genome’. Professor Seth Grant, Sanger Institute, University of Cambridge.
5pm (followed by wine reception). Open to all. Room F21, 7 George Square, Edinburgh.

Using the CCACE Core Staff

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.

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If you have any news, planned events, new research grants, new prominent research papers, or media coverage of your work - or any questions about the centre - then please get in touch with Robin Morton, Centre Knowledge Exchange Officer by e-mailing robin.morton@ed.ac.uk or calling 0131 650 8292.

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