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Contents

Keynote Speakers

Dr Susan Folkman
PhD, Professor of Medicine, the Osher Foundation Distinguished Professor of Integrative Medicine, and the Director of the University of California–San Francisco Osher Center for Integrative Medicine.

An expanded view of the stress process: The role of positive emotions.

This talk will include theory, research, and clinical application regarding the role of positive emotions in the stress process. A number of studies have documented the occurrence of positive emotions under conditions of intense and prolonged stress such as providing care for a loved one with a serious illness, bereavement, and spinal cord injury. Until recently, little attention was given to this phenomenon. Drawing on a programme of research that we have been conducting over the past 15 years, this talk will make the case that positive emotions have an important role in the stress process. I shall summarize findings regarding the co-occurrence of positive and negative emotion in the context of severe stress and discuss evidence regarding whether they matter, what their adaptive functions might be, and the kinds of coping processes that generate and sustain them. The theoretical and clinical implications of this perspective will be discussed. There will also be a personal 'take home' message for members of the audience.

Biography
Susan Folkman, PhD, is Professor of Medicine, the Osher Foundation Distinguished Professor of Integrative Medicine, and the Director of the University of California–San Francisco Osher Center for Integrative Medicine. Dr Folkman received her PhD from the University of California at Berkeley in 1979, where she remained until joining UCSF in 1988. She is internationally recognized for her theoretical and empirical contributions to the field of psychological stress and coping. Her work over the past 18 years has been funded by the NIH and has focused on stress and coping in the context of chronic illness and especially on issues having to do with caregiving and bereavement. Her more recent research focuses on mind-body approaches to care. Dr Folkman served on the NIH/NIMH National Advisory Mental Health Council. She has chaired or been a member of various NIH study sections, served on Institute of Medicine and NIH workgroups, and was co-chair of the American Psychological Association task force on ethics in research with human participants. She is a Fellow of the American Psychological Association and the American Psychological Society.

Professor Charles Spence

Head of the Crossmodal Research Laboratory based at the Department of Experimental Psychology, Oxford University.

Driving by the seat of your pants! A multisensory approach to capturing driver attention.

Humans are inherently limited capacity creatures; that is, we are able to process only a restricted amount of sensory information at any given time. It should come as little surprise then that 'driver inattention' represents one of the leading causes of car accidents. What's more, these attentional limitations are currently being exacerbated by the increasing availability of complex in-vehicle technologies, such as navigation systems, cellular phones, etc. The development of new sensor technologies means that your car will soon know that you are about to crash even before you do. However, potential legal issues preclude the implementation of automated control (e.g. braking) systems in commercial vehicles. The problem therefore becomes one of determining how best to alert drivers to potential road dangers while minimizing the incidence of false alarms (which drivers find annoying). I will review traditional approaches to warning signals design, and then describe a number of recent laboratory- and simulator-based studies detailing a novel brain-based approach to the design of auditory, tactile, olfactory, and multisensory warnings signals (e.g. Ho & Spence, 2005; Ho, Tan & Spence, 2005, 2006). The aim of this research is to develop a new class of multisensory warning signals that can direct attention to the appropriate external location while simultaneously priming the appropriate behavioural response on the part of the driver. Such signals offer the potential for improving driver behaviour in potentially dangerous situations and so reducing the incidence of road traffic accidents. Finally, I will discuss some of the potential limitations that need to be considered when one starts to think about utilizing the body surface to present tactile information displays (e.g. Gallace, Tan & Spence, 2006 a, b).

Biography

Professor Charles Spence is the head of the Crossmodal Research Laboratory based at the Department of Experimental Psychology, Oxford University (http://www.psy.ox.ac.uk/ xmodal/default.htm). He is interested in how people perceive the world around them. In particular, how our brains manage to process the information from each of our different senses (such as smell, taste, sight, hearing, and touch) to form the extraordinarily rich multisensory experiences that fill our daily lives. His research focuses on how a better understanding of the human mind will lead to the better design of multisensory foods, products, interfaces, and environments in the future. His research calls for a radical new way of examining and understanding the senses that has major implications for the way in which we design everything from household products to mobile phones, and from the food we eat to the places in which we work and live. Charles is currently a consultant for a number of multinational companies advising on various aspects of multisensory design. He has also conducted research on human-computer interaction issues on the Crew Work Station on the European Space Shuttle, and currently works on problems associated with the design of foods that maximally stimulate the senses, and with the effect of the indoor environment on mood, well-being, and performance.

Charles has published more than 200 articles in top-flight scientific journals over the last decade. Charles has been awarded the 10th Experimental Psychology Society Prize, the British Psychology Society: Cognitive Section Award, the Paul Bertelson Award, recognizing him as the young European Cognitive Psychologist of the Year, and, most recently, the prestigious Friedrich Wilhelm Bessel Research Award from the Alexander von Humboldt Foundation in Germany.

Professor Emeritus David Rennie
York University, Toronto.

Toward a meta-methodology of qualitative research.

Qualitative research has become a generic term pertaining to analysis of text and textual representation of the analysis. It is attractive for researchers wishing to escape the constraint of the positivistic methods normative in the social and health sciences. Unlike users of positivist methods, however, users of qualitative research vary in terms of the epistemology, or theory of knowledge, to which they subscribe, whether implicitly or explicitly. Some identify with a relativist epistemology, others with a realist one, and still others with a critical realist position that accommodates both realism and relativism. The epistemology adopted crosses with views on method, with relativists generally being reluctant to be bound by procedure, and the realists insisting on it. In this paper it is argued that this state of affairs in the qualitative research community mitigates the impact of qualitative research. It is proposed that there is a need for the development of a meta-methodology that is as coherent as the objectivistic one prescribed by positivism. A tentative methodology the author has developed for the grounded theory method, termed methodical hermeneutics, is outlined and presented as a candidate for such a meta-methodology. The possible range of this tentative meta-methodology is discussed

Biography

David Rennie grew up in a small prairie town in Alberta, Canada. He took degrees in psychology at the University of Alberta (BSc in experimental psychology, 1959; MA in clinical, 1965) and the University of Missouri, Columbia (PhD in clinical, 1971). He joined the faculty at York University, Toronto, in 1970, where he is now a professor emeritus and senior scholar. He has had a small private practice in psychotherapy throughout his years in Toronto.

At Missouri, he assisted Mark Thelen in research on observational learning (i.e. imitation) among children. Upon his arrival at York University along with Shake Toukmanian he taught an undergraduate course in counselling psychology. They embarked on a programme of research in counsellor training, which lasted for several years until both switched to psychotherapy process research.

Up to this point, Rennie had used the natural scientist methods normative for psychology. However, in turning to the study of psychotherapy, he decided to interview clients about their experience of therapy. This decision led to an adaptation of Norman Kagan's technique of Interpersonal Process Recall, which Kagan developed for counsellor training, to the study of therapy. As adapted, in the use of the technique, clients brought to the researcher either a video or audiotape of a therapy session they had just completed. The researcher and client listened to a replay of the tape, where the client was invited to stop it at any point of recalled interest or significance. At these points, the researcher conducted an exploratory interview of the recalled experience. This research interview in turn was tape-recorded. Both the therapy tape and the IPR interview tape were transcribed. The focus was on the IPR transcript, where the transcription of the therapy interview provided context. Eventually, 16 IPR interviews were gathered.

In order to address the transcriptions, Rennie turned to qualitative research as an approach, settling on the grounded theory method developed by Glaser and Strauss. Several years were devoted to this study. As it drew to a close, he turned his attention to the methodology of the grounded theory method, particularly in terms of its underlying epistemology. He has interpreted this epistemology to be critical realist, or a mix of realism and relativism, and the method to be a form of hermeneutics, or interpretation of text. Currently he is exploring the possibility that this methodical hermeneutics is a fitting methodology of other approaches to qualitative research.

He is author of *Client-centred Counselling: An Experiential Approach* (Sage, 1998), and co-editor (with Shake Toukmanian) of *Psychotherapy Research: Narrative and Paradigmatic Approaches* (Sage, 1992), and (with Joerg Frommer) of *Qualitative Psychotherapy Research: Methods and Methodology* (2nd ed.; Pabst, 2006). His most recent publication (with Karen Fergus), is 'Embodied categorizing in the grounded theory method: Methodical hermeneutics in action' (*Theory & Psychology*, 2006, No. 4).

Professor Martin Conway

Institute of Psychological Sciences, University of Leeds.

10,000 Autobiographical memories: Results of the BBC's National Memory Survey.

In the summer of 2006 BBC Radio 4 launched a series of programmes collectively called the *Memory Experience.* A central component of the memory experience was a website (http://www.bbc.co.uk/radio4/memory/) which listeners could access and record aspects of their memories including their three very earliest memories, self-defining memories, and memories of public events. The response was quite unexpected and at the time of writing over 7000 memories had been recorded on the site and with many still coming in we predict 10,000 by the time I give this talk. Listeners not only described their memories but also provided various ratings, e.g. memory vividness, rehearsal rates, emotional intensity, etc., and demographic data, e.g. age, gender, enthnicity, geographical location, etc. They also provided a judgement indicating their attachment style, i.e. secure, dismissing, preoccupied, or mixed. These data constitute the largest corpus of memories collected to date and I will report analyses of overall effects as well as effects decomposed by the rating, demographic, and attachment variables. At this early stage the average age of the earliest memory is (currently) three years three months in a sample of 3498 first memories. Memories for the assassination of JFK and death of Lady Diana are the most frequent flashbulb memories, and self-defining memories are the most vivid and rehearsed of all memories. These findings are highly consistent with findings in the literature and therefore are reassuring that the website data are sound. Changes with these main effects in sub-groups of the sample will be reported in the talk (for instance, it seems that women may have reliably earlier first memories than men).

Biography

Martin A. Conway took his undergraduate degree in Psychology at University College London. His doctoral research was at the Open University 1980–1983, supported by a full SSRC grant, and he was awarded his PhD in march 1984. He then worked as a post-doctoral researcher (1983–1987) at the Medical Research Council's Applied Psychology Unit (APU) in Cambridge, then under the Directorship of Professor Alan Baddeley. Following on from his thesis work he developed a productive line of research into the then uninvestigated area of 'autobiographical memory' – an area in which he was able to establish an international reputation. After Cambridge he worked as a Senior Lecturer (1987–1988) at Hatfield Polytechnic (now the University of Hertfordshire) and a lecturer at the University of Lancaster (1988–1993). In 1993 he was appointed Professor at the University of Bristol and became Head of the Department in 1994. A post he held until 2001 when he left Bristol for a Professorship at the University of Durham, subsequently becoming Head of Department there. In 2004 he was awarded a prestigious ESRC Professorial Fellowship and moved to the University of Leeds, Institute of Psychological Sciences, where he established the Leeds Memory Group, became Director of Research, and subsequently Director of the Institute. In 2006 he became Chair of the Research Board of the British Psychological Society.

He has authored and edited several books on human memory, regularly publishes in international journals and co-edits the journal *Memory* which he co-founded in 1993 with his wife Professor Susan Gathercole. His research has been funded by the ESRC, BBSRC, and the Marsden fund of New Zealand. He has collaborators in several laboratories worldwide and is a regular presenter at international conferences where he is often an invited keynote speaker.

Dr John Livesley

Professor Emeritus, University of British Columbia.
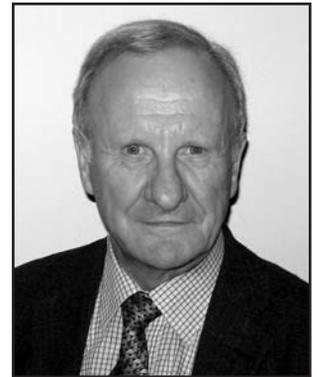
The structure of personality disorder: Implications for trait and social-cognitive approaches to personality.

Personality disorder is a prevalent but poorly researched form of psychopathology. Considerable debate exists about the best way to represent the various forms of disorder. Although official classifications such as ICD-10 and DSM-IV adopt a categorical approach reminiscent of the typal model long discarded by personality psychology, the evidence suggests that individual differences in personality disorder are best represented by dimensions that are continuous with normal personality variation. The results of multivariate studies of clinical data consistently identify a four-factor structure that resembles four of the five major dimensions of personality – a factor corresponding to the openness or culture domain is rarely found.

The four-factor structure appears robust across clinical and non-clinical samples, measures, and cultures raising the possibility that this structure reflects the way personality disorder organized at the biological level. This possibility is supported by behavioural genetic studies. Factor analysis of the genetic correlations among the primary traits delineating personality disorder yields a structure that is highly congruent with phenotypic structure. These findings suggest the existence of a few genetic dimensions that influence the expression of multiple traits to produce the structure described by trait models. But these factors are not the only genetic influences on personality. There also appear to be a large number of generic factors that influence the expression of specific primary traits. Genetic influences of personality disorder appear to be relatively specific.

These findings have implications for the two solitudes that have dominated personality study for the last 30 years: trait and social cognitive theories. Trait theories have sought to explain the structure and coherence of personality in terms of a relatively small number of higher-order or secondary traits with lower-order or secondary traits receiving less attention. Behavioural genetic research, however, suggests that primary traits as the fundamental building blocks of personality. These units show some similarities to the cognitive-affective units adopted by social cognitive theories of personality. They are also consistent with the idea that behaviour is based on modules that evolved through natural selection to solve distinct adaptive problems. This convergence creates opportunities to integrate approaches to personality that are often considered fundamentally different and even irreconcilable.

Biography
Dr John Livesley is Professor Emeritus at the University of British Columbia having previously been Professor and at one time Head of the Department of Psychiatry. He obtained a PhD in psychology from the University of Liverpool in 1969 for a thesis on the development of person perception in childhood and adolescence and a medical degree from the same university in 1974. Subsequently, he trained in psychiatry at the University of Edinburgh and the Royal Edinburgh Hospital and completed training in psychoanalytical psychotherapy at the Scottish Institute for Human Relations. He has held academic appointments in psychology at the University of Liverpool and in psychiatry at the Universities of Edinburgh and Calgary.

Dr Livesley's research focuses on the classification, assessment, and aetiology of personality disorder. His current interests include the use of behavioural genetic studies to explicate the structure of normal and disordered personality and the development of a dimensional classification of personality disorder. His clinical interests are in the treatment of personality disorder especially the development of an integrated eclectic approach that combines effective interventions from different therapeutic approaches.

Dr Livesley is a Fellow of the Royal Society of Canada and has been editor of the Journal of Personality Disorders since 1996. He served as advisor to the DSM-III-R and DSM-IV working groups on the classification of personality disorder. His publications include a volume co-authored with Dennis Bromley entitled *Person Perception in Childhood and Adolescence* published in 1973, a book on the treatment of personality disorder – *Practical Management of Personality Disorder* – published in 2003. He has two edited books on personality disorder: *DSM-IV Personality Disorders* published in 1995, and the *Handbook of Personality Disorders* published in 2001. A third edited book (co-edited with Bert van Luyn and Salman Akhtar), *Severe Personality Disorders: Major Issues in Everyday Practice* is due to be published in 2007.

Professor Alice Eagly

Department Chair of Psychology, and James Padilla Chair of Arts and Sciences, Northwestern University, Illinois.

Sex differences in human behaviour: What are their origins?

Variability in human sex differences across cultures and ecologies reflects humans' sensitivity to local circumstances. Humans are endowed with this flexibility because they evolved in diverse environments with changeable conditions that impinged in differing ways on their reproduction and survival. Accommodating successfully to such challenges required behavioural flexibility, enabled by an evolved capacity for social learning and the cumulation of culture. Such evolved capacities underlie the varying social roles of men and women, which are responsive to local ecologies and social conditions and reflect the costs and benefits that men and women perceive to accompany activities associated with reproduction and survival in a given setting. These costs and benefits are framed by the sexes' evolved physical attributes and related behaviours, especially women's childbearing and nursing of infants and men's greater size, speed, and upper-body strength. This biosocial perspective on sex differences has been tested in relation to human mating preferences, especially in the study of mate preferences across cultures, across time periods, and across individuals within cultures. These studies show that mating practices are flexibly emergent from bio-social factors reflecting the evolved physical attributes and related behaviours of men and women within social and ecological contexts.

Biography

Alice Eagly is Professor and Department Chair of Psychology and James Padilla Chair of Arts and Sciences at Northwestern University. She is also a Faculty Fellow in the Institute for Policy Research. She has held faculty positions at Michigan State University, University of Massachusetts in Amherst, and Purdue University and has held visiting appointments at Harvard University, University of Illinois, University of Tuebingen, the Murray Research Center of the Radcliffe Institute for Advanced Study, and University of Amsterdam.

Professor Eagly has published widely on the psychology of attitudes, especially attitude change, attitude structure, and attitudinal selectivity in information processing. She is equally devoted to the study of gender, with a focus on the social behaviour of women and men and a special emphasis on the study of leadership and on evolutionary issues. In her research areas, she has carried out primary research and meta-analyses of research literature. She is the author of two books, *Sex Differences in Social Behaviour: A Social Role Interpretation* (1987) and (with co-author Shelly Chaiken) *The Psychology of Attitudes* (1993), and the co-editor of four books. Eagly is also the author of over 130 journal articles and chapters in edited volumes and numerous notes, reviews, and commentaries.

Professor Eagly has received several awards, including the Distinguished Scientist Award from the Society of Experimental Social Psychology, the Donald Campbell Award for Distinguished Contribution to Social Psychology from the Society of Social and Personality Psychology, the Carolyn Wood Sherif Award from Society for the Psychology of Women for contributions to the field of the psychology of women, the Gordon Allport Award from the Society for the

Psychological Study of Social Issues, a Citation as Distinguished Leader for Women in Psychology from the Committee on Women of the American Psychological Association, and the Distinguished Publication Award of the Association for Women in Psychology. She also received an International Visitor's Award from the Dutch Scientific Association, a Sabbatical Award from the James McKeen Cattell Fund, and a Visiting Professor grant from the Deutsche Forschungsgemeinschaft and served as McEachern Memorial Lecturer at the University of Alberta and Distinguished Fellow of the UCLA Center for Society and Genetics. Professor Eagly's leadership positions in psychology include President of the Midwestern Psychological Association, President of the Society of Personality and Social Psychology, Chair of the Board of Scientific Affairs of the American Psychological Association, and Vice President for the United States and Canada for the Interamerican Society of Psychology.

Professor Eagly received her AB *summa cum laude* in Social Relations from Harvard University (Radcliffe College) in 1960. She received her MA in Psychology in 1963 and PhD in Social Psychology in 1965, both from the University of Michigan.

Prize Award Winners

Spearman Medal

Dr Richard J Crisp, *University of Birmingham.*

On the multiplicity of group life: Categorization, complexity and reducing intergroup bias.

We're multifaceted. There are diverse, interwoven, and complex ways in which we can describe ourselves and others. Think for a moment about all the different ways in which you can classify yourself: young, British, Asian, woman, Muslim, engineer, even Manchester united supporter … This is quite an array of identities and, of course, there are many more. We know that which of these identities is used to define ourselves – or others – depends upon a variety of factors, including context and motivation; but also that identities are not mutually exclusive. We can be, and often are, identified and identify others according to a combination of group membership: a disabled athlete, a young Briton, a female engineer. Research on multiple social categorization has found that our many and varied, cross-cutting and convoluted, social identities have significant implications for understanding, and attenuating, prejudice and intergroup discrimination. This paper is all about these multiple identities and what they mean for intergroup relations. I review research on multiple identities and discuss when and how different categorization strategies can lead to more positive intergroup attitudes; and how this work can help policy makers and practitioners in their efforts to promote, encourage and enhance harmonious intergroup relations.

Biography

Richard Crisp read Experimental Psychology at St. Catherine's College, the University of Oxford, before studying for a PhD in Social Psychology at Cardiff University. In 1999 he took a lectureship position at the University of Birmingham where he is currently a Reader. Underlying his work is the aim of developing interventions designed to encourage greater egalitarianism in social attitudes and interactions; to reduce prejudice and social exclusion. This work focuses on the psychological processes that define how we think about ourselves and others, and whether these processes can provide a basis for improving the societies in which we live. In particular, his research investigates the psychological impact of perceiving multiple social identities (young, British, black, liberal …). This research has shown that thinking about the different ways in which we can classify ourselves and others can, under the right conditions, lead to the formation of more positive and inclusive intergroup attitudes. With over 40 publications, including edited works and a forthcoming textbook of social psychology, he is past recipient of the British Psychological Society award for Outstanding Doctoral Research Contributions to Psychology (2000) and the Society for the Psychological Study of Social Issues Louise Kidder Early Career Award (2003).

Spearman Medal

Dr Sarah-Jayne Blakemore, *Institute of Cognitive Neuroscience at University College, London.*

The social brain: Development during adolescence.

Humans crave the company of others and suffer profoundly if temporarily isolated from society. The brain has evolved to deal with social communication and we are increasingly learning more about the neurophysiological basis of social cognition. In this talk, I will focus on two components of social cognition: how we understand others' actions and how we attribute mental states to others. Structural brain imaging studies have recently revealed that areas within the social brain continue to develop during adolescence. I will discuss recent research looking at social cognitive development during adolescence.

Biography

Sarah-Jayne Blakemore is a Royal Society Dorothy Hodgkin Research Fellow at the Institute of Cognitive Neuroscience at University College, London. She is currently engaged in research investigating development of the brain during adolescence and social cognition in autism. She is actively involved in Public Engagement with Science: she frequently gives public lectures, worked with the Select Committee for Education in 2000, and has co-authored a book called *The Learning Brain: Lessons for Education* (Blackwell, Oxford, UK; April 2005).

Doctoral Award

Dr Danielle Turner, *University of Cambridge.*

Pharmacological enhancement of cognition.

Some believe that within 20 years people will have embraced the routine use of drugs to enhance performance. Smart drugs will become an essential addition to the armament of self-improvement techniques designed to give children the best possible start in life. 'Drug bars', where psychologists identify the most appropriate enhancer for individual clients, will burgeon on the High Street and most people will be consuming smart drugs in order to succeed. Indeed, society's increasing expectations will have made it impossible to achieve success without drugs, and those few 'misfits' who refuse to conform or are unable to afford the latest formulation, will be gradually forced to the fringes of society.

The use of drugs to improve cognitive functioning is increasing despite the fact that we do not yet fully understand the physiological or psychological effects of currently available cognitive enhancers. Numerous neuropsychiatric disorders, such as attention deficit hyperactivity disorder, schizophrenia, frontal dementia and Parkinson's disease, are characterised by persistent cognitive impairments. Several recent studies from our laboratory, and others, have shown that it is possible to improve cognitive functioning in a wide variety of patient groups using drugs such as methylphenidate (Ritalin™) and modafinil (Provigil™). This talk will describe some of the recent advance in cognitive enhancement and discuss the challenges that society faces as these drugs become more widely available.

Biography

Danielle Turner is a psychopharmacologist at the University of Cambridge, where she completed a PhD in 2005 with Professors Barbara Sahakian and Trevor Robbins. Danielle has worked primarily on cognitive enhancement. She has presented her work at numerous national and international conferences and published in high quality journals including *Neuropsychopharmacology, Biological Psychiatry, Psychopharmacology* and *Cerebral Cortex.* Her research has received widespread recognition and has been discussed in public forums such as *The Guardian* newspaper, the *Today* programme and the BBC World Service. Danielle's article on cognitive enhancement in healthy adults was the most highly cited research paper of the year in the journal *Psychopharmacology,* and she was one of the first researchers to demonstrate improved short-term memory and cognitive flexibility in patients with schizophrenia using add-on stimulant treatment.

Danielle was voted *The Times* Higher Young Researcher of the Year in 2006 and was one of five young scientists selected to present at the Royal Society's Celebrating British Science event, also in 2006. Danielle received special recognition for her work from the Royal Institution as a finalist in the 'Science Graduate of the Year' competition in 2004. Importantly, Danielle has begun extending her work on cognitive enhancement by exploring the ethical implications of developments in neuroscience. She has published several papers describing some of the challenges ahead for researchers in this field. Danielle has also contributed to initiatives such as the Department of Trade and Industry's Foresight project in *Brain Science, Addiction and Drugs* and DEMOS and the Wellcome Trust's joint Better Humans? debate. Danielle is a fellow of the Center for Cognitive Liberty and Ethics (CCLE), California, USA.

Presidents' Award

Professor Simon Baron-Cohen, *Autism Research Centre, University of Cambridge.*

Scientific talent and autism: Is there a connection?

Various claims have been made that Isaac Newton and Albert Einstein had autism. How valid are such claims? And leaving aside these two specific giants in the history of science, is there any truth to the idea that autism and scientific talent are not wholly independent of one another? That is, that scientists as a group have higher rates of autism than one would expect from chance, or that people with autism have a facility for thinking scientifically? In this talk, I consider evidence from experiments with both scientists and people with autism spectrum conditions. The connection between autism and scientific talent is discussed in relation to a psychological theory (hyper-systemizing), an endocrine theory (foetal testosterone), and a genetic theory (assortative mating).

Key references

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Baron-Cohen, S. (2003). *The essential difference: Men, women and the extreme male brain.* Penguin/Basic Books.

Biography

Simon Baron-Cohen is Professor of Developmental Psychopathology at the University of Cambridge and Fellow at Trinity College, Cambridge. He is Director of the Autism Research Centre (ARC) in Cambridge. He holds degrees in Human Sciences from New College, Oxford, a PhD in Psychology from UCL, and an M.Phil in Clinical Psychology at the Institute of Psychiatry. He held lectureships in both of these departments in London before moving to Cambridge in 1994. He is also Director of CLASS (Cambridge Lifespan Asperger Syndrome Service), a clinic for adults with suspected AS.

He is author of *Mindblindness* (MIT Press, 1995), *The Essential Difference: Men, Women and the Extreme Male Brain* (Penguin UK/Basic Books, 2003), and *Prenatal Testosterone in Mind* (MIT Press, 2005). He has edited a number of scholarly anthologies, including *Understanding Other Minds* (OUP, 1993, 2001), *The Maladapted Mind* (Erlbaum, 1997) and *Synaesthesia* (Blackwells, 1997).

He has also written books for parents and teachers such as *Autism: The Facts* (OUP, 1993), *Tourette Syndrome: The Facts* (OUP, 1998), and *Teaching children with autism to mind read* (Wiley, 1998). He is author of the DVD-ROM *Mind Reading: an interactive guide to emotions* (Jessica Kingsley Ltd, 2003) that was nominated for a BAFTA award for Best Off-Line Learning.

He has been awarded prizes from the American Psychological Association, the British Association for the Advancement of Science (BA), and the British Psychological Society (BPS) for his research into autism. For 2007 he is President of the Psychology Section of the BA, Vice President of the National Autistic Society, and received the 2006 Presidents' Award for Distinguished Contributions to Psychological Knowledge from the BPS. His current research is testing the 'extreme male brain' theory of autism at the neural, endocrine and genetic levels.

Designing an NHS mental health response for asylum seeking people and refugees in Glasgow – challenges and opportunities.

The 1999 Immigration and Nationality Act introduced a dispersal policy that would send asylum-seeking people arriving in the south of England to other parts of the United Kingdom including 10,000 to Glasgow. This paper describes the creation of the Compass team, a multi-disciplinary specialist mental health liaison team serving clients of all ages. The role of the team in providing therapy while building the cultural competence and capacity of mainstream services will be described. Finally, the negative mental health correlates of the current asylum process will be discussed and the potential role of psychologists in response.

A liaison model was chosen for the Compass team in order to ensure that mainstream NHS services would also develop their capacity to work with this newly arrived client group. The Compass team provide consultation, joint assessments, teaching and training placements. The team also directly provide specialist therapy to clients with a history of complex trauma.

The Compass staff have the complex task of helping clients cope with past traumas while facing the current stress of the asylum process. The team have responded on a number of levels: the creation of a Users group and attendance at a Scottish cross-parliamentary group. Most recently research has commenced investigating the impact of the asylum process on mental health. As psychologists working within a human rights framework we are in a unique position to not only observe but also to comment upon and challenge policies that create such distress.

Biography
Dr Anne Douglas is a Consultant Clinical Psychologist and Head of the Trauma Speciality for NHS Greater Glasgow and Clyde. She is also an Honorary Senior Clinical Lecturer and Associate Research Fellow in the at the University of Glasgow.

Since qualifying as a clinical psychologist in 1982, Dr Douglas has specialised in the field of trauma, setting up and running specialised services for adolescents and adults with a history of childhood sexual abuse or rape/sexual assault in adult life. More recently she was instrumental in setting up NHS mental health services for asylum seekers and refugees with a history of trauma.

Dr Douglas began her career as an assistant psychologist for the Greater Glasgow Health Board in 1979 following gaining an MA at the University of Glasgow. She went on to complete her Masters in Applied Science in 1982.

She also trained as a psychoanalytic psychotherapist with the Scottish Institute of Human Relations qualifying in 1992. She obtained her doctorate that focussed on anxieties concerning intimate parenting in mothers with a history of abuse in 1998.

Currently alongside her Compass team which focuses on the mental health of asylum seekers and refugees, her role as Head of Trauma Speciality has also seen her develop two additional psychology led multi-disciplinary teams; Sexual Abuse/Sexual Assault and most recently the Trauma and Homelessness team.

In addition she is currently involved in several research studies including further refinement of her doctorate research and a study investigating the impact of the asylum process on client's mental health.

Distinguished Contributions to Professional Psychology Award

Dr Mark Hayward, *University of Surrey.*

To whom do we listen?

In 2005 more than 300 people from diverse backgrounds gathered at the University of Surrey to learn from each other about the experience of hearing voices. The expression of curiosity from a range of perspectives was an inspiration to many who attended. My presentation will attempt to capture the spirit of collaborative enquiry that prevailed at this conference as it explores many of the views that have contributed to current understandings of voice hearing. Explorations of the views of children, people who hear voices, cognitive therapists and interpersonal theorists will culminate in a consideration of evolving therapeutic approaches that emphasise the relational nature of the voice hearing experience. Within this relationship we are learning from a further perspective – that of the voice.

Biography

I am a husband, father, Christian and supporter of West Ham United Football Club. I also work as a clinical psychologist within the NHS and academia, and in these roles I have the privilege of listening to many people describe their experiences, struggles and aspirations.

I first studied psychology 14 years ago, following a frustrating and disempowering career as a nurse. I was under the impression that clinical psychologists worked from a more expansive knowledge base with a degree of autonomy and influence. To date I haven't been disappointed as opportunities to learn alongside people from a range of backgrounds have been plentiful. These collaborations have enabled specialist interests and publications to span three areas: the experience of hearing voices; the involvement of service users and carers within training and research; and the development of practices that promote the social inclusion of people with mental health problems.

My work with people who hear voices has spanned many of my years in clinical practice and has recently focussed on the exploration of voice hearing within a relational framework – acknowledging the voice as an interpersonal 'other' and researching differing aspects of the relationships that people develop with the voices they hear. These relationships are currently the subject of therapeutic scrutiny as new forms of therapy seek to transform distressing relationships into those that are experienced as more controllable and less intrusive. Curiosity about relationships with voices has extended to the experiences of hearers who have no contact with mental health services.

Award for Excellence in the Teaching of Psychology

Dr Clare Wood, *Coventry University.*

A blended learning approach to teaching research methods.

Blended learning refers to an approach to education which combines e-learning materials and environments with traditional print materials and face-to-face teaching. This presentation will describe a model for implementing a blending learning approach to teaching and learning in higher education. It will also demonstrate how this model has been successfully implemented in the teaching of research methods to Masters level psychology students at Coventry University.

Biography

Clare Wood is Senior Lecturer in Psychology at Coventry University, having worked previously at the Open University and University College Northampton. She originally studied Social Psychology at the University of Kent and obtained her PhD from Bristol University in 1997. Her research interests relate to reading acquisition in children, including the use of new technologies to support reading tuition. She also has research interests in the psychology of teaching and learning, which extends to the study of learning in higher education.

Memorial Lectures

Michael Argyle Memorial Lecture

Professor Alex Haslam, *Exeter University.*

Questioning the banality of evil: Have Milgram and Zimbardo misled us?

This paper reappraises historical and psychological evidence that is routinely taken to support the 'banality of evil' thesis – the idea that ordinary people commit atrocities without awareness, care or choice. Counter to this thesis, historical evidence suggests that perpetrators act thoughtfully, creatively, and with conviction. Drawing from the BBC Prison Study (Reicher & Haslam, 2006) and other social psychological data, a case is made for an interactionist approach to tyranny which explains how people are (a) initially drawn to extreme and oppressive groups, (b) transformed by membership in those groups, and (c) able to gain influence over others and hence normalize oppression. These dynamics can make evil appear banal, but are far from banal themselves.

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Reicher, S.D. & Haslam, S.A. (2006a). Rethinking the psychology of tyranny: The BBC Prison Study. *British Journal of Social Psychology, 45*, 1–40.

Biography

Alex Haslam is Professor of Social and Organisational Psychology at the University of Exeter and a former Commonwealth Scholar at Macquarie University (Sydney) and Jones Scholar at Emory University (Atlanta). He was previously Associate Editor of the *British Journal of Social Psychology* (1999–2001) and Chief Editor of the *European Journal of Social Psychology* (2001–2005). He is currently on the editorial board of eight journals (including *JPSP, PSPB, BJM* and *Scientific American Mind*).

At Exeter he is part of a team of internationally-renown researchers investigating a range of core social and organisational topics — including leadership, motivation, stereotyping, group conflict, stress and prejudice. This work has been published in top international journals in both psychology and management. His most recent books are *Psychology in Organisations: The Social Identity Approach* (2nd ed., Sage 2004); *Social Identity at Work: Developing Theory for Organisational Practice* (with Daan van Knippenberg, Michael Platow & Naomi Ellemers, Psychology Press, 2003) and *Research Methods and Statistics in Psychology* (with Craig McGarty, Sage, 2003).

In 2002 he collaborated with Steve Reicher on the ground-breaking BBC programme *The Experiment* — a project that subsequently led to over a dozen publications (e.g. in *BJSP, JAP, SPQ, PSPB*). In 2005 he received a Kurt Lewin award from the European Association of Experimental Social Psychology for outstanding contribution to research in social psychology. In 2006 he was made a fellow of the Canadian Institute of Advanced Research and his work with Michelle Ryan on the Glass Cliff was short-listed for the *THES* Research Project of the Year.

Hans Eysenck Memorial Lecture
Professor Philip Corr, *Swansea University.*

Personality and psychology: Eysenck's unifying themes.

Hans Eysenck provided a new way of thinking about personality: instead of viewing it as yet another separate faculty of mind, he saw personality as reflecting fundamental brain-behavioural systems: (a) that exert pervasive (input) influences on all psychological functions; and (b) which serve to differentiate people in (output) terms of habitual traits of behaviour (e.g. as measured by questionnaire). Thus, he argued, that fully to understand the functioning of, for example, cognitive (e.g. attentional bias) or behavioural (e.g. reinforcement effects) processes, it is necessary to consider variations in the operating parameters of personality systems. This is one way in which Eysenck's approach to personality offers a unifying theme in psychology. Related to this first theme, Eysenck also advocated the unification of the individual differences tradition and the experimental tradition – two traditions that are still largely separated – to combine their respective strengths. Third, he called attention to the need for psychology to integrate all levels of analysis – ranging from DNA, through neuropsychology, to social behaviour. Eysenck's vision of a unified psychology is now starting to be realised with the technological sophistication of cognitive neuroscience. But the full force of his vision is seen in the development of neuroscientific models of personality that are embedded in experimentally-derived brain-behavioural systems, for example, as developed by one of Eysenck's own students, *viz.*, Jeffrey Gray, who built an alternative personality model based upon three fundamental brain-behavioural systems: the *Fight-Flight-Freeze System* (FFFS), the *Behavioural Inhibition System* (BIS), and the *Behavioural Approach System* (BAS).

Biography

Philip J. Corr is Professor of Psychology at Swansea University, and is a Chartered Psychologist and Affiliate Fellow of the British Psychological Society (AFBPsS). He gained a BSc (First Class) in Psychology (Goldsmiths College, University of London) in 1989, and then a PhD (Institute of Psychiatry, London) in 1994. Whilst at the Institute, Philip was a member of the Personality Research Group, whose members included Jeffrey Gray (who supervised his PhD) and Hans Eysenck (with whom he shared a desk for several months).

Philip's research interests centre around two main topics: (1) the behavioural, cognitive and affective neuroscience of emotion and personality, focusing on (a) basic defensive systems of fear and anxiety, and (b) the personality and psychopathology continuum; and (2) schizophrenia spectrum research, focusing on laboratory markers of psychosis-proneness and actual psychosis. During his research career, he has used a variety of methods, including genetics, neuroimaging, psychophysiology, and psychopharmacology.

Philip has published over 60 scientific papers, and one major textbook (*Understanding Biological Psychology*; Blackwell, 2006); and he is soon to have published an edited book (*The Reinforcement Sensitivity Theory of Personality*; Cambridge University Press, 2007). Philip is on the Editorial Board of, as well as being an Associate Editor for, the *Journal of Individual Differences*, and is an Associate Editor for *Personality and Individual Differences*. In 2001, Philip was awarded the 'Early Career Development Award', from the International Society for the Study of Individual Differences (ISSID), for his personality research work.

Symposium

The treatment of personality disorder in forensic settings.

Convenor: Glenda Liell, *Offending Behaviour Programmes Unit, HMPS.*

Until recently, those suffering with personality disorder were considered to be 'untreatable' and were often denied access to psychological therapies. Although it is recognised that working with this group presents many challenges, it is now acknowledged that treatment, in its widest sense, can have beneficial effects, at least in the short term. However, it is not yet clear what types of treatment are best indicated for this group. This symposium aims to present three innovative treatment approaches for personality disorder in three different settings: a Special Hospital, a Therapeutic Community within a medium secure unit, and a prison-based Dangerous and Severe Personality Disorder (DSPD) unit. Although the referral criteria differs for each of the units, the clients in these settings will often have multiple personality disorders (including high levels of psychopathy) and complex mental health needs. The treatment programmes in all three units aims to address the clients' needs in relation to mental health, social functioning, offending behaviour and, crucially, reducing the risk of future harm to others.

Paper 1
Sue Evershed, *Lead Psychologist, Rampton Hospital.*

The treatment pathway for patients in Rampton Hospital's Personality Disorder Directorate.

The Personality Disorder Directorate at Rampton Hospital takes adult male patients who are suffering from a personality disorder and who constitute a 'grave and immediate risk' to the public. Our patients are by definition, high risk, and difficult to engage in treatment. Most have committed serious offences, and most present as highly complex clinical cases, usually with about three 'types' of personality disorder and significant other metal health problems. Large numbers have had negative experiences of treatment or attempts to obtain treatment. Many have been denied services because they are deemed untreatable; many have 'failed' in treatment programmes in the community, or other hospitals and prisons. Our challenge has been to provide a viable treatment pathway to address multiple mental health needs and risk issues, and to provide this in a manner that will engage patients and facilitate change. This paper describes our pathway, the adaptations to standard programmes that we have made, and the rationale for this.

Paper 2

John Shine, *Consultant Forensic Psychologist, Millfields Unit.*

Development of the Millfields Unit – an adapted Forensic Therapeutic Community.

Democratic Therapeutic Communities have a long history in forensic settings and have shown some success in managing and treating offenders with personality disorders. However, research has indicted that offenders with severe personality disorder are likely to pose particular problems when admitted to this treatment model, such as high levels of therapy interfering behaviours and institutional misconduct leading to elevated attrition rates. For this reason, some democratic therapeutic communities exclude offenders who score highly on the Hare Psychopathy Checklist. Nevertheless, there are good therapeutic reasons to support the TC approach as an overarching model for working with severely personality disordered offenders. The challenge is how to incorporate innovations and modifications of this approach in order to meet the needs of this group, rather than adopting referral systems based on exclusion, diversion or therapeutic nihilism. This presentation describes the development the Millfields Unit: an innovative pilot scheme in North East London for patients with severe personality disorder and detained under the Mental Health Act in a Medium Secure setting. The model utilises a TC approach but with important adaptations specifically to deal with the needs of patients with severe personality disorder. The changes include modifications of some of the key TC principles; provision of a wide range of individual and group based support therapies available to patients and a step down supportive housing facility close to the unit intended to provide a continuum of care and therapy to assist reintegration to the community. Some of the issues and challenges encountered in the early phases of setting up this pilot are described.

Paper 3

Jonathan Downing, *Senior Psychologist, The Westgate Unit at HMP Frankland.*

Westgate Unit: 30 months on.

The Westgate Unit is one of four sites set up to deliver the Government's commitment to deliver 300 new DSPD places in high secure hospitals and prisons.

The aim of the joint Department of Health, Home Office and HM Prison Service DSPD Programme is to develop, pilot and deliver new services specifically for people who present a high risk of committing serious sexual and/or violent offences as a result of a severe personality disorder.

This presentation will cover the development of the DSPD programme at the Prison-based Westgate Unit (HMP Frankland) since its official opening in May 2004. Principles underpinning key aspects of the unit including staffing and the assessment, treatment and management of prisoners will be discussed within the context of its supporting and therapeutically driven regime. Links will be drawn with other symposium presentations and reflections made on how the Programme at Westgate is meeting its aims 30 months on.

Paper 4
Glenda Liell, *Senior Psychologist, Chromis Programme, HMPS.*

The Chromis Programme.

The Chromis Programme is based on a number of years of research, expert advice and broad consultation with staff and offenders. It has a theoretical base and is supported by a review of the empirical evidence. The programme aims to reduce violence in offenders whose level or combination of psychopathic traits disrupts their ability to engage in treatment and change. The emphasis on encouraging offenders to develop new fulfilling ways of living pro-socially, and to see that they can achieve their goals without inflicting violence on others There is a significant focus on motivation, and what underpins it with this type of offender. The programme is currently being piloted at the Westgate Unit at HMP Frankland, and this presentation will cover some of the principles underpinning this treatment approach together with some feedback on the progress that has been made so far.

Attention and Distraction

Convenor: Polly Dalton, *Royal Holloway, University of London.*

In order to function effectively in a complicated world, we must be able to focus our attention on relevant sensory information, avoiding distraction by irrelevant items. The factors influencing the success with which people are able to achieve such selectivity of processing have been the focus of much research, in both applied and laboratory settings. The four talks in this symposium address issues relating to the control of overt and covert selection attention in vision and touch.

Paper 1
Polly Dalton, *Royal Holloway, University of London.*

The role of working memory in the control of tactile selective attention.

Load theory suggests that working memory plays an important role in the control of selective attention (e.g. Lavie *et al.*, 2004). However, so far this proposal has only been tested in vision. The present research asks whether working memory is also important for tactile attentional control. Participants were asked to respond to continuous target vibrations while attempting to ignore pulsed distractor vibrations. High (vs. low) load in a concurrent working memory task was found to lead to greater interference by the tactile distractors. These results suggest that working memory availability is important for successful tactile selective attention, demonstrating for the first time that the principles of load theory apply to the tactile modality.

Paper 2
Philip Quinlan, *University of York.*

Relations between perceptual binding and working memory.

Experiments are reported in which a simple digit memory task is paired with a visual attention task. In the attentional task displays contained three coloured shapes; one of which was designated a colour/shape conjunction target. Participants made speeded judgments to the target whilst retaining a sequence of visually-presented digits. The index of interest was the degree to which irrelevant information from the nontarget items interfered with target responses. In the first experiment nontarget interference was abolished under conditions of high memory load and in the final two experiments nontarget interference was unaffected by variation in memory load. The results provide important caveats for load theory (Lavie, 2005).

Paper 3
Jan Theeuwes, *Vrije Universiteit, Amsterdam, Netherlands.*

Remembering a location makes the eyes curve away.

Working memory is a system that keeps limited information online for immediate access by cognitive processes. This type of active maintenance is important for every-day life activities. Previous studies have shown that there is a close link between working memory and visual attention. The present study extends this finding by showing that there is not only a link between working memory and attention but also between working memory and the eye movement system. The current findings show that maintaining a location in spatial working memory affects saccadic eye movement trajectories towards a visual target, as the eyes deviate away from the remembered location. This provides direct evidence for a strong overlap between spatial attention, working memory and the eye movement system.

Paper 4
Nilli Lavie, *University College London.*

Load theory, distraction and capture of attention by entirely irrelevant distractors in daily life and in the lab.

Load theory suggests that the level and type of information load involved in task-relevant processing determines the extent to which irrelevant distractors can be successfully ignored. Whereas high perceptual load that engages full attentional capacity in task-relevant processing can eliminate distractor processing, high load on executive control functions such as working memory results in increased interference by irrelevant distractors. Although there is much evidence for the theory (see Lavie, 2005 for review) the measures for distractor interference used typically involved distractor stimuli that were in some sense relevant to the task (e.g. the distractors were associated with task responses). In daily life however people are often distracted by stimuli that are entirely irrelevant to their current task. In the present talk I describe new studies that examine the role of load in determining the likelihood that people will be distracted by such irrelevant distractors in daily life, as well as in laboratory tasks that assess distraction and capture of attention by entirely irrelevant distractors.

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Theory and Qualitative Research in Psychology
Convenors: Orla Muldoon, *Univerity of Belfast* & Zazie Todd, *University of Leeds.*

Different qualitative methods, and even different varieties of the same method, have different theoretical underpinnings. Researchers are also increasingly 'mixing' methods – qualitative with quantitative, or different qualitative methods, within the same project or even on the same data. This poses interesting questions about how to deal with different epistemologies. Is the variety of theoretical approaches a strength or a weakness in qualitative research? This symposium examines the role of theory in qualitative research in psychology. A series of four papers considers the epistemological underpinnings of different approaches, and the implications for researchers. Can theory unify qualitative methods – or is there strength in diversity? Should we be paying more attention to empirical or theoretical issues? The symposium will consider these and other questions relevant to all qualitative researchers. The discussant, Anna Madill, will comment on the problems and solutions proposed before opening the floor for a lively discussion.

Paper 1
Robert Elliott, *University of Strathclyde*

A generic approach to qualitative research: Beyond brand names.

The field of qualitative research has become filled with multiple schools, including Grounded Theory, Empirical Phenomenology, Consensual Qualitative Research, Heuristic Inquiry, Interpretative Phenomenological Analysis, and others. In this presentation, I argue that these competing brand names may be counterproductive, in that they spread confusion and exaggerate differences among research practices that share a largely overlapping set of common research activities. I summarize those common research activities and their main variations, updating previous presentations. Attending to what the researcher actually does, as opposed to the school they espouse, would demystify qualitative research and focus more attention on fundamentals such as deeply and accurately understanding one's data and offering rich, coherent and lively accounts of informants' experiences.

Paper 2
Jonathan Potter, *Loughborough University.*

Theory is not the answer.

The major recent expansion in qualitative research has been partly stimulated by theory and meta-theory. It has been supported by a more sophisticated understanding of how science operates and more advanced conceptions of the practical, social and indexical nature of language. Nevertheless, the danger in relying on theory to drive qualitative research forward is that the theory may presuppose categories and assumptions about psychology that research might otherwise interrogate. This paper will advocate taking seriously the empirical study of what people do. It will emphasise the value of (a) working with naturalistic material; (b) using digital video and audio; (c) attending carefully to issues of description and transcription; (d) working with participants' own orientations. It will also highlight relevant problems with (a) open-ended

interviews; (b) coding and classification; (c) assumptions built into 'analytic' software. The arguments are illustrated with examples from what would traditionally be called 'emotion' and 'knowledge' taken from an ongoing research programme analysing interaction on the NSPCC's child protection helpline.

Paper 3
Jonathan A. Smith, *University of London*

The theoretical underpinnings of interpretative phenomenological analysis.

This paper will give a brief introduction to the three key theoretical touchstones for interpretative phenomenological analysis (IPA): phenomenology, hermeneutics, idiography. It will discuss the particular 'take' IPA has on these groundings.

There is no single phenomenology and IPA does not subscribe to one phenomenological position. In the paper, I will describe some elements from within phenomenology and consider how these have been interpreted by IPA. As part of this, I will think about issues involved in adapting phenomenological philosophy for an empirical qualitative psychology.

I will give particular attention to how Heidegger took phenomenology in a more hermeneutic direction in his exposition of 'appearance'. Some other features of a hermeneutic phenomenology will be outlined. The paper will also present the case for an idiographic experiential psychology and show how this is instantiated in IPA.

Paper 4
Lucy Yardley, *University of Southampton.*

From 'mixing methods' to 'composite analysis': pragmatic approaches to methodological triangulation.

This talk first considers the promise and perils of triangulating or 'mixing' qualitative and quantitative methods. Qualitative and quantitative approaches to research are methodologically complementary in some respects, but conflicts between the epistemological foundations associated with each approach can cause difficulties in combining them. This paper argues that John Dewey's pragmatist philosophy offers an epistemological framework that can embrace and reconcile both qualitative and quantitative methods. Dewey argues that the aim of inquiry is not to seek a truth that is independent from human experience, but to achieve a better, richer experience – whether through scientific analysis, artistic exploration, social negotiation, or any productive combination. The paper illustrates how this can be achieved not by 'mixing methods' but by a 'composite analysis' that preserves the integrity of the component parts of the analysis while creating a whole that is greater than the sum of the parts.

Gender differences in social attitudes and behaviours:
Extensions and challenges to extant research

Convenor: Diane Houston, *University of Kent at Canterbury.*

Considerable research has documented the effects of socialization practices on gender differences in social behaviour. This symposium considers recent longitudinal, cross-cultural, and experimental evidence that both extends and challenges some previous theories and research on gender differences observed across a variety of important social phenomena, including physical aggression, partner victimization, system justification, and ambivalent sexist attitudes. Tremblay and Cote will review longitudinal evidence indicating that girls learn alternative strategies to physical aggression and self-control better than boys, and consider potential mechanisms that may explain these sex differences in social learning patterns and the expression of physical aggression. Archer will review cross-cultural evidence obtained from 52 nations indicating that national levels of gender equality, individualism, and sexist attitudes represent social and cultural factors significantly associated with different rates of victimization of women and men. Ahmavaara and Houston will review cross-cultural evidence indicating that Finnish men and women score markedly higher on hostile sexism when compared to adults' scores in other countries, suggesting that high levels of perceived gender equality and women's empowerment within a culture do not necessarily protect against hostile sexism toward women. Calogero and Jost will review experimental evidence indicating that individual differences in need for cognitive closure interacts with environmental exposure to different types of sexist stereotype content to differentially affect men's and women's support for the status quo, and other types of system justifying responses. Alice Eagly, an internationally recognized expert on the development and maintenance of sex differences in social attitudes and behaviour, will act as the discussant for this symposium.

Paper 1
Richard E. Tremblay, *University of Montreal, Canada; University of Central Lancashire, UK* **& Sylvana M. Cote,** *University of Montreal, Canada.*

Cain's and Judith's heritage: Sex differences in developmental trajectories of aggression.

Results of several recent longitudinal studies on sex differences in developmental trajectories of aggression will be presented. They show that, contrary to social learning theory, children are not learning to use physical aggression from four years of age onwards. They are rather learning not to use physical aggression, and learning alternative strategies to achieve their aims. Girls appear to be better at learning this self-control and learning alternative strategies. Various mechanisms explaining these sex differences will be discussed.

Paper 2
John Archer, *University of Central Lancashire, UK.*

Cross-cultural differences in physical aggression between partners: A social role analysis

In developed western nations, both sexes commit acts of physical aggression against their partners. Data from 16 nations showed that this pattern did not generalize to all nations. The magnitude and direction of the sex difference was highly correlated with national-level variations in gender empowerment and individualism-collectivism. As gender equality and individualism increased, the sex difference in partner violence moved in the direction of lesser female victimization and greater male victimization. A second analysis, of 52 nations showed that three indices of women's victimization were also inversely correlated with gender equality and individualism. Sexist attitudes, and relative approval of wife beating were also associated with women's victimization rates, but general levels of violent crime were not. The findings are discussed in terms of a social role approach to variations in sex differences between cultures.

Paper 3
Anni Ahmavaara & Diane Houston, *University of Kent.*

Hostile sexism in Finland.

Finland is typically perceived as a haven of gender equality. Indeed, international measures of gender equality have confirmed this perception. In 2002, Finland scored fifth highest in the world on measures of women's empowerment such as the Gender Empowerment Measure (GEM) compiled by the UN. Glick and Fiske (1996) developed the concept of *ambivalent sexism*, arguing that subjectively positive attitudes about women serve to justify and maintain women's subordination. Glick and colleagues (2000, 2004) also argue that endorsement of hostile sexism in a given culture is a sign of overall gender traditionality, which is negatively correlated with gender equality indices such as the GEM. The present paper reports findings from three studies which consistently demonstrate that both sexes in Finland score remarkably high on hostile sexism by international comparison. More notable, however, was the high mean score of Finnish women on hostile sexism. The gender gap in hostile sexism was the fourth smallest by international comparison, and particularly small when compared to other nations where men scored similarly highly on this scale. The high level of hostile sexism identified among the Finns is further contrasted by Finnish women's low scores on benevolent sexism. The Finnish females' score was the second lowest by international comparison. This finding contrasts with Glick *et al.*'s hypothesis that women score high on benevolent sexism in countries where men score high on hostile sexism. Finnish adults' strong endorsement of hostile sexism has important implications for the theory of Ambivalent Sexism.

Paper 4
Rachel M. Calogero, *University of Kent* **& John T. Jost,** *New York University, USA.*

Effects of exposure to sexist stereotype content on system-justifying responses: The moderating role of need for cognitive closure.

Prior experimental research has demonstrated that the activation of benevolent and complementary gender stereotypes increases support for the societal status quo. The present effort builds upon previous research by examining the need for cognitive closure (NFCC) as a potential moderator of the relationship between stereotype activation and several types of system justification. Across two studies, NFCC moderated men and women's responses to several measures of system justification. In Study 1, NFCC moderated support for the status quo among men exposed to sexist stereotype content, but not among women. In Study 2, NFCC moderated the body surveillance and body shame scores of women and men, with opposite trends observed for high NFCC individuals. Body surveillance and body shame scores were highest for high NFCC women exposed to benevolent gender stereotypes and lowest for high NFCC men exposed to complementary gender stereotypes. Discussion considers the role of NFCC and the effects of stereotype activation on ideological, affective, and self-perception measures that contribute to support for the status quo.

Psychology and Law
Convenor: Professor Tim Valentine, *Goldsmiths College, University of London.*

Psychological research has made substantial contributions to the development of investigative interviewing and our understanding of eyewitness identification. Professor Ray Bull will review research on police interviews and the influence of interview skills on eliciting confessions. Witnesses may be formally interviewed some considerable time after the relevant event. Dr Fiona Gabbert will evaluate self-administered interviews, which have potential to improve the accuracy of eyewitness testimony by establishing a record as soon as possible. The frailties of eyewitness identification have long been recognised by the legal system. Initially CCTV appeared to offer a new technological solution to identifying offenders. Dr Josh Davis will review evidence of human error in matching unfamiliar faces from CCTV. The potential for comparison of facial shape to support facial identification from CCTV will also be discussed. For over 100 years identification of offenders from latent fingerprints at a crime scene has been presented in court as being infallible. Dr Itiel Dror will discuss human error by fingerprint experts, and present important new research that fingerprint experts can be influenced by the context of an investigation. Professor Valentine will act as discussant to draw together these themes and evaluate current trends in investigative interviewing and eyewitness identification.

Paper 1
Professor Ray Bull, *University of Leicester.*

Interviewing suspects.

Almost no research on the interviewing of suspects was undertaken in the UK prior to the introduction in the 1980s of the routine audio-taping of such interviews. Rumour has it that prior to that time some interviews in Britain were conducted in a very pressurising way. Today the media tell us that coercive interviewing of suspects regularly occurs in some parts of the world.

This presentation will briefly overview research conducted in England and Wales involving analyses of tape recorded interviews with suspects which up to the mid 1990s found that while coercion was by then rare, police interviewers seemed not to know what to do if the suspect did not confess. In light of this, the police introduced a new philosophy and training programme for such interviews. Our recent findings concerning whether some the tactics/skills emphasised in such training seem to influence confessions will be described. Then, very recent research from other countries concerning which interviewer skills may be related to confessing will be reviewed.

Paper 2

Dr Fiona Gabbert, *University of Abertay*; **Dr Lorraine Hope,** *University of Portsmouth* **& Professor Ron Fisher,** *Florida International University.*

Protecting eyewitness evidence: Examining the efficacy of a self-administered interview tool.

Information obtained from eyewitnesses plays a crucial role in many forensic investigations with a majority of police officers agreeing that witness statements provide major leads for an investigation (Kebbell & Milne, 1998). However, research also demonstrates that erroneous eyewitness testimony is the leading cause for the conviction of innocent suspects (Huff, Rattner & Sagarin, 1996). Given the crucial role of eyewitness evidence, it is vital that reliable statements are obtained as soon as possible after an incident has been reported. This is not always possible due to heavy demands on police time and resources. Here, two studies trace the development of a new tool, the Self-Administered Interview (SAI), which comprises key elements of the Cognitive Interview and has been designed to elicit a comprehensive initial statement. In Study 1, SAI participants reported significantly more correct details than participants who provided a free recall account and performed at the same level as participants given a standard Cognitive Interview. Accuracy levels were high in the SAI condition and participants using the SAI did not produce significantly more incorrect (or confabulated) details than participants given a Cognitive Interview. In Study 2 participants viewed a simulated crime event and half recorded their statement using the SAI. After a delay of one week, all participants took part in a free recall test. SAI participants recalled significantly more correct details in the delayed recall task than participants in the control group.

Paper 3

Josh Davis, *Goldsmiths College, University of London.*

CCTV on trial: Comparing video images with the 'defendant' in the dock.

In court, a verdict may depend on the judgement by members of a jury that the defendant is depicted in CCTV evidence. Expert witnesses in facial mapping techniques may also be called to provide the jury with assistance in reaching a decision. Experiments using a single-item identity-verification design are reported investigating the matching of live actors present in the room with moving video footage. The results confirmed that even when conditions are optimal, the matching of facial images can be highly susceptible to error. And yet, this task simulates the question that a jury with no assistance may need to resolve, namely, is the defendant in the dock the person in the video? The performance of humans was also compared with a forensic facial mapping software package, DigitalFace. Preliminary findings indicate that this technique, if presented by witnesses in court could positively help a jury in resolving this type of disputed identity issue.

Paper 4
Dr Itiel Dror, *University of Southampton.*

Expert error in forensic identification decisions.

To achieve reliability, experts must be consistent, at least in the very basic sense of within-expert reliability. Such reliability requires that experts make the same decision under the same circumstances, and thus be consistent with themselves. To achieve objectivity, experts must focus only on the data and ignore irrelevant information, and thus be unbiasable by extraneous context. We investigated whether fingerprint experts are reliable and biasable by conducting covert data collection in which we represented case studies they had judged in the past. Under different manipulations we found that many of the decisions they now made contradicted those they had made in the past (for details and to download the papers, see http://www.ecs.soton.ac.uk/~id/biometrics.html).

The findings are discussed in terms of forensic identification decisions.

Stress, appraisal and coping in sport and exercise

Convenor: Joanne Thatcher, *University of Wales, Aberystwyth.*

This symposium focuses on appraisal, emotional outcomes and coping in sport and exercise contexts. Lavallee will consider the roles of athletes' positive reappraisals of adverse events such as sports injury, as coping mechanisms and of athletic injury in influencing these appraisals. The role of social support during stressful events will be discussed by Rees, considering how the stress-buffering effect of social support is linked to the athlete's appraisal of an experienced stressor. The underlying properties of stress, as proposed by Lazarus and Folkman (1984), will be examined by Thatcher and Day in relation to elite athletes' experiences of competitive stress and longitudinal research will be presented that explores the links between elite athletes' appraisals of stress, their underlying properties and the athletes' resultant emotional responses. Centring on adherence to exercise, Biddle will examine links between exercise adherence, psychological states and outcomes. This presentation will critically appraise the research in this area, highlighting the lack of creativity evident in this body of work and the need for more critical approaches to this research. Each paper will consider contemporary research and will offer avenues for future research. Professor Susan Folkman will offer her views as a symposium discussant following these presentations.

Paper 1

Dr David Lavallee, *School of Sport and Exercise Sciences, Loughborough University.*

From vulnerability to growth: The role of positive reappraisal in sport.

Although coping theory and research has helped understand how adverse experiences can have both positive and negative effects in a wide range of contexts, the extant literature does not specify why some people benefit from stress while others become debilitated. Indeed, the prediction of positive versus negative outcome is a challenge in the broader conceptualisation of stress and coping. This presentation will examine research with sporting populations and focus on how individuals construe benefits from adversity. Through an examination of the contexts of sports injuries, eating disorders and retirement from sport, positive reappraisal emerges as a particular way of coping that contributes to better psychological adjustment to distress and helps to generate positive meaning. Whereas active coping has been found to be most adaptive in situations that are controllable and modifiable, positive reappraisal may be most adaptive in situations that are not controllable by direct action.

Positive reappraisal is also perhaps most responsible for contributing to beliefs among athletes that they have benefited from a stress-related life event and research suggests that the degree to which an individual identifies with the sporting component of their self-concept (i.e., athletic identity) plays a central role in this process. Future research suggestions and applied implications will be discussed.

Paper 2
Stuart Biddle, *Loughborough University.*

Physical activity and the feel good effect: If you only have a hammer, everything looks like a nail!

There is a widely held view that 'physical activity makes you feel better' and, indeed, such a view has been held for centuries. While contemporary literature in exercise science and psychology does support such a view, specifically through research on anxiety, depression, mood/affect, and self-perceptions, it also masks a number of issues that require further study. Making specific reference to exercise adherence, this presentation will provide a summary of the evidence linking exercise to various psychological states and outcomes. Gaps in research will be highlighted. To stimulate debate, a critical approach will be taken through the view that a great deal research has been narrow and lacking in creativity, epitomised by the approach 'I have a hammer so it must be a nail!' That is, many approaches are used uncritically. Discussion will feature issues of measurement (e.g. categorical and dimensional approaches), research design, populations of study, exercise and physical activity programming and interventions, and the interface between exercise intensity, affective responses, and adherence.

Paper 3
Tim Rees, *University of Exeter.*

Stress, social support, and performance in sport.

As noted by Hardy, Jones and Gould (1996), some elite athletes feel they must 'go it alone' (p.234) when dealing with stress. The recommendations from the sport psychology literature are, alternatively, that athletes should be encouraged to be proactive in harnessing social support from those around them (e.g. Richman, Hardy, Rosenfeld & Callanan, 1989). Research on social support in sport is scarce, however, and has generally been limited to its influence on sport injury. There is recent evidence, however, that social support may explain as much as 24 per cent of the variance in performance over and above the variance explained by stress (Rees, Hardy & Freeman, in press). This offers a very powerful indication of the impact social support may have in relation to sports performance. Generally, two principal models identify the conditions under which different kinds of social support influence outcomes (and thus performance): the stress-buffering model, and the main (or direct) effect model. The main effect model proposes that social support has a beneficial effect irrespective of whether persons are under stress. Stress-buffering is tied to models of the stress process, appraisal and coping. The stress-buffering influence of social support might operate by leading to benign appraisal of the stressful events, through a direct transfer of resources, or by promoting better coping behaviours. The role of social support in this process will be further discussed in relation to recent work with sports performance, and future research issues and applied implications will be discussed.

Paper 4
Joanne Thatcher & Melissa Day, *University of Wales, Aberstwyth.*

Stress appraisals in elite sports competitors.

This presentation will report on research that has employed an appraisal based approach to understanding the stress and emotion experiences of elite athletes, in line with proposals made by Lazarus and Folkman (1984) and Lazarus (1999). Lazarus (1999) proposed that the most difficult problem for stress theory is identifying what makes an event psychologically noxious. He suggested that research should aim to identify the rules that make an individual appraise an event as stressful. Lazarus and Folkman's (1984) transactional model suggested that appraisals are based on the constantly changing relationship between the person and the environment. They have proposed that stressors in any environment will share common characteristics, known as underlying properties that underpin any situation perceived as stressful. These underlying properties combine with person factors, such as beliefs and commitments, to influence cognitive appraisals (Lee & Poole, 2005). Various studies have examined individual properties suggested by Lazarus and Folkman (1984) such as predictability (Dugdale, Eklund & Gordon, 2002) and novelty (Kirschbaum *et al.*, 1995). This presentation will discuss research that has explored these properties within the stress experiences of elite trampolinists; examining whether these properties are relevant to the competitive sporting context and whether some are potentially more relevant than others. In addition, the presentation will consider research that has examined the underlying properties in a longitudinal context, with particular reference to examining the link between these properties and specific appraisals and emotions. The presentation will also discuss the role of underlying properties in the context of applied implications and future research directions.

Current issues in autobiographical memory
Convenors: Chris Moulin & Catriona Morrison, *University of Leeds*

Autobiographical memory can be described as the 'psychological history of the self'. Central to this view is the idea that memory of our own life in some way supports our personality and our self construct. In this symposium, four talks describe this view, and illustrate a few issues that outline the breadth of this field at present. Given that autobiographical memory function is seen to have increasing impact in clinical and educational settings, it is critical that some of the basic measurement and theoretical issues are addressed. In this symposium, the basis of autobiographical memory in the brain, and the intersection between autobiographical memory and other areas of cognitive function (such as language) are covered. In addition, researchers consider the cues which cause memories to come to mind, and the best way of measuring them.

Paper 1
Pascale Piolino, *Psychology & Cognitive Neurosciences Lab., CNRS, Paris.*

Episodic autobiographical memory across the lifespan: New insights from neuropsychological and neuroimaging data.

Autobiographical memory refers to information and personally relevant events acquired in a specific spatiotemporal context that a person has accumulated starting from his or her very early childhood, and which enables him or her to construct a sense of identity and continuity. It is formed of different types of representations, from general knowledge about oneself (semantic component) to very specific personal events (episodic component). The episodic component is characterized by an autonoetic state of consciousness, which enables a conscious recollection of the personal event, in its original encoding context, and implies a mental time travel. We report studies from neurodegenerative disease, traumatic brain injury and healthy aged subjects which show that frontotemporal neocortex and hippocampus play a distinct role in autobiographical memory retrieval and support the view that the hippocampus is needed for re-experiencing detailed episodic memories across the lifespan, no matter how old they are.

Paper 2
Lia Kvavilashvili & Simone Schlagman, *University of Hertfordshire.*

Involuntary autobiographical memories in and outside the laboratory: How different are they from voluntary autobiographical memories?

Research on autobiographical memory has primarily focussed on voluntary memories that are deliberately retrieved in response to word-cues provided by the experimenter. However, in everyday life autobiographical memories often come to mind spontaneously without deliberate attempt to retrieve anything. Two studies are reported which further tested a new method, developed by the authors, to elicit involuntary autobiographical memories in the laboratory. This method involves asking participants to carry out an undemanding vigilance task (detecting vertical lines in a stream of stimuli with horizontal lines) and record any involuntary memories

that came to mind. Involuntary memories are usually reported as being triggered by irrelevant cue-phrases presented on the screen together with the line patterns. Study 1 compared three types of autobiographical memories in a sample of 44 undergraduate students: involuntary autobiographical memories elicited in the laboratory, everyday involuntary memories recorded in a diary and voluntary memories recalled via traditional word-cue method. Involuntary laboratory and involuntary diary memories did not differ on several memory characteristics (e.g. specificity, vividness) but both were significantly more specific and became more positive over time than voluntary memories. In addition, involuntary laboratory memories were retrieved significantly faster than voluntary autobiographical memories. Results of Study 2 showed that presenting words or images as cues did not affect the number, retrieval times or characteristics of involuntary memories but presenting no cues significantly reduced the number of reported memories. Taken together, results have important implications for current theories of autobiographical memory and open up interesting avenues for future research.

Paper 3
Catriona M. Morrison, *University of Leeds.*

Language and autobiographical memory.

Competing theoretical accounts of autobiographical memory posit alternative underlying mechanisms responsible for the phenomenon of infantile amnesia. One suggestion is that the development of autobiographical memory is language-dependent: memory is coded in terms of the linguistic tools available to the individual at a given point in time. This paper reports experiments that were designed to test this hypothesis. Participants were asked to recall memories for concepts whose labels we know are acquired at different points throughout childhood – that is, the concept names vary in their age of acquisition. They were also asked to date the memory recalled. The data show that the age of acquisition of the word used as a cue is always earlier than the age of the associated earliest memory, and that the lag between word acquisition and earliest associated memory was between 12 and 18 months. However, the correlations between age of word acquisition and earliest memory averaged around 0.8, indicating a systematic relationship between acquisition and earliest memory. I argue that these findings are consistent with a language-dependent model of emergent autobiographical memory in childhood.

Paper 4
Alex Fradera, *SHL.*

Studying the autobiographical past: Verification and standards of measurement.

Autobiographical memory is a rich domain of study that can yield important insights about the human memory system. However, when studying memories that are not generated and retrieved within a laboratory setting, we face genuine measurement challenges. One of these is verifiability – whether retrieved memories are truly genuine – and another is whether to approach the organisation of the past from an objective or subjective point of view. I will briefly outline some existing ways to address verifiability, including the use of recorded personal events, informants, and public event paradigms. I will then discuss approaches to the measurement of

autobiographical memory organisation. On the one hand, memories can be considered using objective measures such as their chronological distance from the present or by biological age of the individual at the time of their encoding. On the other, the autobiographical past can be considered in terms of events, boundaries or stages that were meaningful to the individual. I will illuminate these issues by taking as an example a study (Fradera & Ward, 2006) that addresses verification conventionally, by using public events, and looks at organisation of memory in a more novel fashion, using a metric taken from the participants' subjective perspective. This measure is formed by asking participants to construe their past in terms of subjectively defined life periods, and assessing their contribution to remembrance of public events that fall within them using a quantitative methodology.

Imaging the mind
Convenors: Tony Morland & Andy Ellis, *University of York.*

Psychology is the study of the mind and it is not surprising therefore that psychology has been revolutionized by the development of techniques that have allowed the activity in the brain to be measured and localized. This symposium aims to show how neuroimaging techniques can elucidate the underlying brain activity associated with various cognitive and perceptual phenomena.

Paper 1
Andy Ellis, Lisa Henderson & Laura Barca, *University of York.*

Reading and the cerebral hemispheres

We have known for a long time that in most right-handed people the left cerebral hemisphere is specialised for most aspects of language processing, including reading. We present an overview of our recent research aimed at clarifying the nature of the left hemisphere superiority for reading and the nature of the integration between the two hemispheres that is required for effective moment-to-moment reading. Topics covered include the role of the two hemispheres in recognising words viewed at fixation, hemispheric integration in developmental dyslexia, and the use of magnetoencephalography (MEG) for visualising the transfer of information within the brain during reading.

Paper 2
Piers Cornelissen, *University of York.*

Visual word recognition: The first half second.

In the last decade, neuroimaging studies using PET and fMRI have revealed the functional neuroanatomy of reading. Despite this success, there remains considerable uncertainty about what the particular network components do, how they interact with each other, and how the system fails in conditions like developmental dyslexia. One solution is to unpack the temporal sequence of events in the brain during visual word recognition. This would allow us to know, for example, whether the visual processing of letter-strings is complete prior to phonological access, or whether the two occur in parallel. Such information should set powerful constraints on models of word recognition. Accordingly, we have been using magnetoencephalography (MEG) to study cortical dynamics. Data will be presented from a number of studies which show this work in progress, with a particular focus on the visual processing of words, letter strings and other objects.

Paper 3
Isabella Paul, Pádraig T. Kitterick, Peter J. Bailey & A. Quentin Summerfield,
University of York.

Sound segregation in children and adults as measured by MEG.

A perturbed component of a harmonic complex may be heard as a separate source of sound from the other components. We used magneto-encephalography (MEG) to study the role of attention when listeners segregate and spatially localise perturbed components. The third component of a 24-tone complex with a fundamental frequency of 200Hz was not perturbed in the *In-tune* condition, was raised in frequency by eight per cent in the *Mistuned* condition, and started 160ms after, but ended with, the other components in the *Delayed* condition. The third component came from 45° to the left or right or straight ahead. Stimuli were presented binaurally to 16 adults and 16 pre-adolescent children with normal hearing, while brain activity was recorded with a 248-channel whole-head neuro-magnetometer. Subjects either reported whether the third component came from the left or right (Attended conditions) or ignored the acoustical stimuli and performed a visual discrimination task (Unattended conditions). Difference waves were computed between the *In-tune* condition and the *Mistuned* and *Delayed* conditions. Difference waves from sensors located over the temporal lobes displayed two prominent peaks. For mistuning, a brief peak 160ms after stimulus onset was followed by a longer peak starting at 300ms. Our analyses show that two perturbations which cause a component to segregate perceptually from a harmonic complex produce related, but distinct, neuro-magnetic signatures. The difference in the robustness of the later peaks is compatible with the idea that a component segregated by delay engages attention automatically, while a component segregated by mistuning must receive active attention to be heard out consistently.

Paper 4
Antony Morland, *University of York.*

Can we image what people perceive?

Brain imaging, most notably functional Magnetic Resonance Imaging (fMRI), has resulted in a paradigm shift in the study of the relationship between behaviour and the brain activity that mediates it. One of the areas in which neuroimaging has progressed our knowledge of the relationship between brain and behaviour is visual perception. In this presentation I will review two studies. The first informs on what brain activity underlies unconscious visual processing and conscious visual perception. The fMRI investigation of a patient with a brain lesion, which renders the patient blind to stimuli whilst having the paradoxical ability to distinguish between stimuli unconsciously ('blindsight'), is an effective combination of neuropsychological and neuroimaging research that seeks to find a neural mechanism for visual awareness. The second study measures brain signals, also with fMRI, in normally sighted individuals when they are presented with a variety of stimuli at differing levels of discriminability. The participants were required to perform a demanding discrimination task while being scanned. The discrimination was so demanding that frequently participants 'missed' differences between stimuli that were present and raised 'false alarms' when differences were absent. Interestingly, the brain activity correlated well with what the participant claimed, rather than the physical difference between stimuli. Both studies provide interesting insights into how measuring activity of the human brain can help us understand how we perceive the world.

Applied Neuropsychology
Convenor: Ashok Jansari, *University of East London.*

Neuropsychology developed out of neurology, the treatment of patients with central neurological problems. Since the 1970s the functional understanding of the systems underlying cognitive processes such as memory, language, vision and problem-solving has been aided by both the application of, and development of theories following work on patients. Three decades on, the field is beginning to go full circle by the application of cognitive neuropsychology to the assessment and treatment of patients. The paper by Wilson is a classic demonstration of using Baddeley and Hitch's theoretically developed Working Memory model to understand very specific memory problems in two single cases. Wilson also goes on to talk about the development of the 'errorless learning' technique for application to rehabilitation. This theme is taken on by Haslam and Hodder in a study that compared different rehabilitation techniques in the treatment of memory-impaired adults finding that errorless learning should be the technique of choice. The final two papers fittingly move research and future clinical work forwards by the use of new technologies. Jansari *et al.* have developed an assessment of dysexecutive problems that involves role-playing in a laptop Virtual Reality (VR) environment which is both ecologically-valid and provides the clinician or researcher a large array of measures of problems classically seen in this condition; this assessment has been able to reveal deficits in patients who have passed standard clinical tests. Meanwhile, Berry *et al.* show it may be possible to use a specially developed camera worn around the neck which responds to each sensory change in the environment by taking a photograph. The series of generated photographs is then played back to the participant in an attempt to consolidate any fading visual memorial traces. Their findings show that this method has far stronger benefits relative to other methods such as reviewing written diaries. In summary, the symposium is a clear demonstration of how it is possible to use experimentally-driven work in an applied manner in the assessment and treatment of neurological patients.

Paper 1
Barbara A. Wilson, *MRC Cognition and Brain Sciences Unit, Cambridge and The Oliver Zangwill Centre, Ely.*

The application of neuropsychological theory to clinical practice.

Neuropsychology is the study of the relationship between brain and behaviour. Theoretically oriented neuropsychologists are concerned primarily with understanding the mechanisms of cognition while clinical neuropsychologists are concerned predominantly with the assessment and rehabilitation of people with brain injuries. Using theoretical studies of memory as an example, this paper considers ways in which the former can have a bearing on the latter. The Working Memory (WM) Model of Baddeley and Hitch (1974) illustrates how it was possible to determine the underlying deficits of two patients with unusual clinical presentations. The first of these patients was a man suspected of having Alzheimer's Disease but who turned out to have a deficit in the phonological loop component as described in the WM model. The second patient, referred for help with episodic memory deficits, showed nearly normal performance on tests of episodic memory. Referring to the WM model for an explanation of what might be going wrong, it was hypothesised that she might have an impairment of the visual spatial sketch pad component. This, indeed, turned out to be true. Moving from assessment, studies of implicit

memory functioning in the 1990s contributed to the development of a new treatment technique known as 'Errorless Learning' (EL). The origins of EL are described together with some examples of successful treatment programmes incorporating EL principles.

Paper 2
Emma Berry, Georgina Browne & Narinder Kapur, *Addenbrooke's Hospital and Microsoft Research, Cambridge.*

Using SenseCam, a wearable camera, to alleviate autobiographical memory loss.

We describe some interesting results in which two or more older patients with severe memory problems, resulting from Alzheimer's disease and encephalitis, showed significant improvements in their autobiographical memories after viewing images taken by SenseCam, a small wearable camera. SenseCam has been developed by Microsoft Research, Cambridge, UK. Worn around the neck, it uses sensors to take photographs automatically in response to environmental changes and records several hundred images during the course of a day, which can watched as a rapid slide show. By using SenseCam to record significant events, we hoped that the images could be used as a pictorial diary to cue and consolidate autobiographical memories. In the control condition a written diary was used to remind the patients of autobiographical events. After systematically reviewing SenseCam images, the patients were able to recall approximately 80 per cent of the events up to nine months later. A written diary was not as effective and was quickly forgotten. We propose that periodic review of images helps in the consolidation and retrieval of memories that would otherwise be lost. We describe how patients report many benefits of using this technology, including 'joy' of sharing experiences again, improved confidence and reduced anxiety. Other potential applications of using SenseCam in therapy and rehabilitation settings will be described.

Paper 3
Dr Catherine Haslam, *Exeter University.*

The method of choice in memory rehabilitation: Errorless learning, vanishing cues or spaced retrieval?

Errorless learning, when used in memory rehabilitation, is guided by the principle of error elimination or minimisation. This principle has been applied in different ways and often in combination with other techniques; most notably vanishing cues and spaced retrieval. Rarely has the efficacy of these techniques been examined and not in a sufficiently controlled manner to draw meaningful conclusions. In this paper we report results of an investigation directly comparing the effectiveness of these methods, alone and in combination, under controlled conditions in healthy adults and memory-impaired patients. Healthy adults learned information under standard and dual task conditions: the latter to facilitate comparison with patient performance. Our findings indicate that learning under conditions of spaced retrieval proved most effective for both healthy adults and patients with acquired brain injury. Importantly, a combination of techniques proved no better than isolated techniques. This challenges the assumption that memory performance is improved by combining several techniques and encourages a more targeted approach to memory rehabilitation.

Paper 4
Ashok Jansari, Robert Agnew, Katarina Akesson, Sally-Anne Duncombe, Candy Wong & Lesley Murphy, *University of East London.*

In search of an ecologically valid measure of the Dysexecutive Syndrome: Can Virtual Reality help in rehabilitation?

The accurate assessment of individuals with dysexecutive syndrome (DS) is vital for effective rehabilitation. Although neuropsychological tests of executive function exist, they are not necessarily ecologically-valid or predictive of real-world adjustment (Shallice & Burgess, 1991). The JAAM (Jansari, Agnew, Akesson & Murphy) paradigm is an office-based role-playing task constructed to tap the major deficits seen in DS. As well as a real-world version, the task was also created to be run on a laptop computer as a Virtual-Reality (VR) environment. Four sets of studies using JAAM have shown that it:

a. is able to significantly discriminate DS patients from matched controls (NCs) and that the VR findings replicate the real-world findings;
b. is able to pick up gains following rehabilitation;
c. can replicate to a different set of patients in another country (Australia); and
d. can be used to explore age-related decline in executive functioning.

Additionally, fine-grained analysis of individual patients' performance on specific cognitive constructs can reveal impairments which are often being missed on formal clinical testing. The findings are discussed with reference to ecological-validity and clinical utility of experimental paradigms and the possibility of using JAAM to explore theories of frontal functioning in patients with focal surgical lesions.

Poster Presentations

The poster presentations are listed by:
Board number, Title, Author and Affiliation.

Clinical

A01

'When I look at the photograph I wish he was here with me.' The experience of bereavement for adults with Learning Disabilities: A qualitative study.

Margarita Karavella & Deborah Rafalin, *City University.*

Objectives: Although a variety of research studies have been conducted in the area of grief for people with learning disabilities, many have not directly involved this client group. Consequently, there is a gap in our understanding regarding this issue. The primary objective of this study was to investigate the experience of bereavement for adults with learning disabilities and to enable them to explore the feelings often associated with grief. In addition, this research aimed to identify coping mechanisms and personal support mechanisms that assisted the participants through their process of grief.

Design: This was a qualitative study using Grounded Theory, one of the most widely used qualitative analysis methods in bereavement research.

Methods: Seven semi-structured interviews were conducted with adults with learning disabilities (four males and three females) who had experienced a bereavement of a close relationship. The participants ranged in age from 33 to 66 (mean=44.28 with SD=13.65) and the time passed since their bereavement ranged from three years to 30 years (mean=7.4 with SD=10). For recruitment purposes, all materials were created specifically for the needs of individuals with learning disabilities. Interviews lasted approximately 35 minutes each and they were all audio recorded.

Results: Employing Grounded Theory as an analytic strategy, six key interconnected themes emerged from participants' shared experiences: loss, emotions, change, memories, coping and moving on. A model of bereavement for individuals with learning disabilities was subsequently developed.

Conclusions: From the analysis of participants' accounts, it seems that the experience of bereavement for people with learning disabilities shares similarities to that of the general population. However, there were additional experiences that seemed to be specific to this client group, e.g. change of home and issues connecting to the withholding of information. The clinical implications of these emergent themes and suggested areas for further research were considered.

Defensive responding in self-report schizotypy questionnaires: The role of context and population.

Kerry Schofield, Ute Leonards & Christine Mohr, *Bristol University*.

Objectives: Reliability of self-report questionnaires is constantly debated. For instance, defensive responding regarding positive but not negative psychotic-like symptoms has been suggested for relatives of schizophrenics. To test the role of knowledge about psychotic symptoms and the context in which the questionnaires are presented, we investigated whether instructions (control study for psychiatric population/link between creativity and personality), and/or the level of prior knowledge of the participants would influence the degree of positive but not negative schizotypy scores. We hypothesised that naive subjects and participants in the creativity condition would score higher on positive schizotypy compared to the prior knowledge and psychiatry groups.

Design: Between-participant design with knowledge about psychosis (medical versus psychology students) and instruction (psychiatry versus creativity) as between-subject measures on as independent variables, and (1) positive schizotypy, and (2) negative schizotypy as the two dependent variables.

Methods: Participants were 90 first-year psychology students who had not yet received abnormal psychology lectures and 70 third-year medical students who had just followed a two-day lecture series on schizophrenia. In a classroom setting, participants were asked to fill in the O-LIFE, a standardised schizotypy questionnaire (Mason & Claridge, 1995). Half of each group was given instructions relating the questionnaire to psychosis, and the other half to creativity.

Results: The psychology students scored significantly higher than medical students on positive schizotypy. The instruction condition was only relevant for psychologists: those in the 'creativity' condition scored higher on positive schizotypy than those in the 'psychiatry' condition.

Conclusions: Knowledge about a psychiatric condition, and the research context, influence response mode in self-report schizotypy questionnaires. In particular, response biases become evident for obvious features of psychotic illness (positive symptoms), but appear irrelevant to less evident features (negative symptoms). Future studies, whether conducted in a clinical or non-clinical context, should consider, and ideally control this potential bias.

A03

Change in adult attachment style: factors associated with positive change.

Jong Sun Lee & Antonia Bifulco, *Lifespan Research Group, Royal Holloway, University of London.*

Objective: The study investigates the stability of attachment style and variables associated with positive change. Even though attachment style is relatively stable approximately 30 per cent of adults report change. Changes in relationships and self-esteem were predicted to effect positive change. The role of childhood adversity was explored.

Design: A three-year follow up of 154 largely high-risk community women were interviewed on two occasions assessing attachment style, support and self-esteem. A diagnostic psychiatric interview was also used to reflect change in disorder in the intervening follow up period and other assessments reflected change between time 1 and time 2.

Methods: The women, aged 26–59 years, were originally studied in 1990–1995, and followed up three years later. The sample was selected from North London GP practices by questionnaire screening for psychosocial risks including childhood adversity and poor family relationships. The Attachment Style Interview (ASI) – a support-based assessment – was used.

Results: Correlation among attachment style subscales at both time points ranged from 0.20 to 0.49. Forty-eight per cent of individuals retained the same attachment style and 23 per cent shifted in a positive direction towards more security. Twenty-nine per cent changed in a negative direction. Those with Enmeshed attachment style (55 per cent) had most positive change, followed by Angry dismissive style (38 per cent). Binary logistic regression shows that reduction in anger and mistrust of others and change in desire for engagement were most predictive of attachment style change. Positive changes in support were significant predictors but self-esteem had no impact. Positive change was most evident in those with adverse childhood experience.

Conclusions: This study found that attachment styles can change when relationships improve. This has significant implications both for attachment theory and therapeutic intervention.

Domestic violence I: The individual characteristics, interpersonal problems and communication patterns in violent married men.

Jong Sun Lee & Jung Hye Kwon, *Department of Psychology, Korea University.*

Objectives: The purpose of this study was to investigate individual and interpersonal characteristics of violent married men. This study hypothesised that verbally and physically violent men tend to be more impulsive, authoritative, depressive, and have more serious interpersonal problems and show demand or withdrawal communication patterns simultaneously.

Design: 250 married couples completed self-report questionnaires. To verify responses and to ensure consistency in reporting of the rate and severity of violence between husband and wife they each completed a violence assessment and returned it independently.

Methods: This study divided the participants into eight different groups using CTS II and MSI. Each group was examined on the basis of their individual characteristics (impulsiveness, authoritative attitude, and depression), interpersonal problems (Inventory of Interpersonal problems) and communication patterns (Communication Patterns Questionnaire).

Results: To examine group difference one-way ANOVA and Post-Hoc were conducted. The results of Post-Hoc indicated that V-VD (Verbally Violent Distressed) men are more impulsive, depressive, and tend to be more withdrawn and less constructive when talking with their wives ($p<.001$). P-VD (Physically Violent Distressed) men tended to be more impulsive ($p<.001$), authoritative ($p<.001$), and depressive ($p<.05$) than NVND (Non Violent Non Distressed) men. P-VD (Physically Violent Distressed) men were also more demanding and withdrawn in their communication patterns simultaneously compared to NVND men in their marital relationship ($p<.001$). In addition, P-VD men tended to be more aggressive in their interpersonal relationships ($p<.05$).

Conclusions: This study suggests that the characteristics of physically violent men are different not only from happily married men but also from that of verbally violent men. This study suggests also the direction for differential interventions.

A05

Domestic violence II: The individual characteristics, interpersonal problems and communication patterns in violent married women.

Jong Sun Lee & Jung Hye Kwon, *Department of Psychology, Korea University.*

Objectives: The aims of this study were to examine gender difference in terms of rate of violence and individual and interpersonal characteristics of married violent women as compared to violent men. This study hypothesised that there is no significant difference between husbands and wives in the rate of violence as well as in other characteristics associated with violence.

Design: 250 married couples completed self-report questionnaires. Among the 250 women, 83 verbally violent women and 65 physically violent women were included in the final analysis.

Methods: This study divided subjects into eight different groups using CTS II and MSI. Each group was examined on the basis of their individual characteristics (impulsiveness, authoritative attitude, and depression), interpersonal problems (Inventory of Interpersonal problems) and communication patterns (Communication Patterns Questionnaire).

Results: To examine difference among groups of verbally and physically violent women and non-violent women, one-way ANOVA and Post-Hoc ware conducted. The result indicated that verbally violent women are more impulsive and tend to be more withdrawn ($p<.001$) in their communication pattern than non-violent women. They were also more avoidant ($p<.001$) and less constructive ($p<.001$) in the way they communicated. Physically violent women were also more impulsive ($p<.001$) and depressed ($p<.001$) than non-violent distressed women. Physical violent women tended to be more withdrawn ($p<.001$) in their communication style while also being more demanding ($p<.001$) than non-violent distressed women. In addition, physically violent women were less assertive ($p<.05$) and more aggressive ($p<.001$) in their interpersonal relationships.

Conclusions: This study suggests that married violent women are not different from married violent men in their communication patterns, interpersonal problems, and individual characteristics.

A06

The disappearing problem of depression amongst prison inmates?

Lesley Maunder & Holly Jones, *Psychological Services, Northumberland Tyne and Wear NHS Trust,* **Mark Moss,** *Northumbria University, Newcastle-upon-Tyne,* **Laura Cameron, Genevieve Quayle & Roger Paxton,** *Psychological Services, Northumberland Tyne and Wear NHS Trust.*

Objectives: The prevalence of depression amongst prisoners has been well documented. However, it is possible that the problem of anxiety is underestimated in the prison population. This study aimed to identify the relative prevalence of depression and anxiety amongst male prisoners in a prison in North East England.

Design: 61 prison inmates were invited to take part in this study following referral from the prison doctor or the Mental Health In-reach Team. Possible disorder status was assessed using the Hospital Anxiety and Depression Scale (HADS).

Methods: Participants were recruited over a 90-day period in a male prison in the North East of England. Once consent had been obtained participants were asked to complete the HADS as honestly as possible. The HADS is an Instrument designed to detect the presence and severity of mild degrees of mood disorder, anxiety and depression.

Results: Of the 61 prisoners invited to participate, 34 accepted, and 27 declined. Of the 34 who completed the assessment 29 presented with symptoms of anxiety and only five with symptoms of depression.

Conclusions: Contrary to previous published findings the number of cases of depression in the population employed in this study was overshadowed by that of anxiety by a ratio of 6:1. This finding is somewhat surprising and suggests that anxiety amongst prisoners is a far bigger problem than previously estimated. Although the low number of prisoners with depressive symptoms may indicate a reduction in the prevalence of depression in prisons, it is also possible that inmates consider depressed feelings as 'normal' and adjust their expectations accordingly. Further research is underway to investigate these possibilities.

A07

The psychological effects of caring.

Suzanne Carroll, *University of Ulster.*

Objectives: This study hypothesised that there would be differences in the levels of caregiver burden, depression, distress, guilt, perception of social support and feelings of life satisfaction that are experienced by caregivers depending on certain factors. Specific hypotheses were proposed in relation to the influence of gender, age of caregiver, employment status and the disability/illness of the care recipient. It was also proposed that the relationship between caregiver burden and psychological distress is mediated by the influence of perceived social support.

Design: This study used a cross-sectional research design (Group 1=Caregivers for individuals with Alzheimer's Disease, Group 2=Caregivers for individuals with a physical disability). Participants were accessed through two caregiver support agencies.

Method: Participants completed six self-report measures and a demographic questionnaire (N=77). Completed questionnaires were returned by post. The data were entered into an SPSS package and were subjected to statistical analysis.

Results: It was concluded that significant gender differences existed in depression scores, with females reporting higher levels (t=2.259, df=71, p<.017). Significant differences in guilt scores were observed in relation to the age of the caregiver, with the hypothesis that younger caregivers would experience higher levels of guilt being accepted (r=−.284). It was hypothesised that caregivers who were also employed would experience higher levels of caregiver burden. This hypothesis was supported (t=2.203, df=67, p<.031). Employment status did not significantly affect the depression levels of caregivers as was proposed (F=1.123, p>.05). A significant difference was found in the levels of caregiver burden experienced by the two caregiver groups, with those caring for individuals with Alzheimer's Disease reporting higher levels (t=2.21, df=68, p<.015). The mediation model proposed for the role of social support was not accepted as the â weights for burden was not significantly affected by including social support in the model (â=.61, p>.05).

Conclusions: The results of this study highlight the significant impact that the caregiving role can have on the psychological functioning of the caregiver. Suggestions for intervention and avenues for future research are discussed.

Adult attachment moderates the association between a stressor and depressed mood.

W. Nicholls, *University of Wolverhampton &* **D. Cramer,** *Loughborough University.*

Objectives: This study investigated whether attachment style moderated the association between a stressor and depressed mood. It has been hypothesised that a secure attachment style would buffer an individual against depression in times of stress, whereas an insecure attachment style would intensify feelings of depression at such times. To distinguish the particular attachment that was important in this model, childhood and adulthood attachment were compared.

Design: This study was cross sectional. In the model tested, the stressor (social comparison) was the predictor, attachment style was the moderator, and depressed mood was the criterion.

Methods: Two hundred and forty four participants completed self report measures on childhood attachment, adulthood attachment, social comparison, and depression. Internet-mediated research methodology was used to collect the data from a non-clinical sample.

Results: Moderator analysis demonstrated that adulthood attachment moderated the association between social comparison and depression. In particular, significant correlations were observed between the stressor and depression for insecurely attached individuals, no significant correlation was observed for the securely attached individuals. Childhood attachment did not moderate the association between social comparison and depression.

Conclusions: A secure adult attachment style can buffer against depressed mood in times of stress.

Risk factors for post-traumatic stress disorder (PTSD) following a technological disaster in a residential area: The respective contributions of gender and emotional distress.

Allan Jones & Ask Elklit, *University of Aarhus, Denmark.*

Objectives: Women are more prone to developing PTSD compared to men. Reasons for the differences are unclear at this time. There is evidence to suggest that the observed gender differences in PTSD prevalence may be carried by distress related to the trauma and by levels of anxiety. However, such studies are few in number and findings are inconclusive. The present study was carried out in an attempt to clarify the respective contributions of gender and trauma related distress and anxiety in the development of PTSD following a technological disaster (factory explosion) in a residential area in Kolding, Denmark, in November, 2004.

Design: Survey analysis was adopted in order to assess psychosocial predictors of PTSD in a large community based sample.

Methods: 516 evacuated adults situated near the disaster area but not affected by the explosion were assessed three months after the disaster using the General Health Questionnaire-Anxiety scale, and a scale measuring the level of perceived danger at the time of the disaster.

Results: Thirteen per cent met DSM-IV criteria for PTSD, with significantly more women meeting diagnostic criteria compared to men. Logistic regression analysis showed gender to be a significant predictor of PTSD (OR: 2.40; 95 per cent CI: 1.35-4.28, $p<.01$). However, when adjusting for level of perceived danger (OR: 2.59; 95 per cent CI: 1.75-3.82, $p < .01$) and anxiety (OR: 1.29; 95 per cent CI: 1.20-1.38, $p<.01$) gender was no longer a significant predictor of PTSD (OR: 1.71; 95 per cent CI: .89-3.30, $p=.11$).

Conclusions: The study lends support to previous findings that gender differences in PTSD prevalence are carried by trauma related distress and by anxiety, suggesting that emotional distress is a greater risk factor for women than men.

A10

The use of cognitive behaviour strategies in the management of social anxiety in Asperger's Syndrome: An exploration.

Marie Louise Bason, *University of Manchester & The Together Trust, Cheadle, UK.*

Objectives: This study is focused on the implementation of cognitive behaviour intervention with a young male adult diagnosed with Asperger's Syndrome (AS). The client experienced appreciable social anxiety that had led to increased social isolation and poor self-image. This work explored the potential of cognitive behaviour methods to develop the insight of dysfunctional thoughts about situations, the client himself and other people. This study also sought to investigate the relevance of cognitive behaviour intervention with reducing social anxiety, developing theory of mind aspects and developing coping skills in social situations. The study aimed to add to the scarce availability of information with regard to therapeutic input with people with AS.

Design: A single case-study that aimed to bridge research and practice. Fifteen sessions were held with the client over a period of six months. This was the only type of intervention received by the client. The case study provided the opportunity to answer open, exploratory questions.

Methods: The participant engaged in preliminary sessions followed by the 'treatment stage'. Interpretative phenomenological analysis was the main methodology employed to discern the psychological essence of the phenomenon, in this case, the personal experience of social anxiety. Self-assessment scales, namely the Beck Depression Inventory, the Beck Anxiety Inventory and the Beck Hopelessness Scale were also utilised. Administration at the preliminary, treatment and immediate post-treatment phase tracked change in three areas – anxiety levels, depression and negative attitudes about the future.

Results: The intervention was successful in identifying and developing awareness of dysfunctional thoughts and connecting these with the client's feelings and behaviour. Over time the participant was helped to engage in social experiences and to deal more effectively with anxiety. The participant had the opportunity to engage in practising coping skills in sessions and in the community. The intervention was educational and therapeutic, with Beck scores for depression and anxiety decreasing over time.

Conclusion: Cognitive behaviour work has a valuable role in helping youths with AS who experience considerable social anxiety, with opportunities for improvement in the areas of emotional literacy, theory of mind and social interpretation.

A11

Lifestyle and physical health correlates of bipolar disorder.

Sarah Acaster, Ylva Dahlin, Amanda Elkin, Katharine Mead & Anne Farmer,

Social Genetic and Developmental Psychiatry Centre, Institute of Psychiatry,
King's College London.

Objectives: Whilst previous research has investigated lifestyle and physical health correlates in schizophrenia, little is known about their role in bipolar disorder. This study has investigated body mass index (BMI), smoking behaviour, alcohol and caffeine consumption in bipolar subjects and controls to ascertain whether bipolar disorder is associated with patterns of behaviour that are related to physical health.

Design: This study employed a case – control design as part of a genetic association project.

Method: 1000 volunteers were recruited, comprising 500 subjects with bipolar disorder and 500 controls screened for the absence of any mental disorder. The bipolar cases were recruited through local press and poster campaigns as well as outpatient databases. The control participants represent an opportunity sample of staff and students of King's College London. All participants were interviewed and provided details relating to their BMI, smoking habits and alcohol and caffeine consumption.

Results: The number of bipolar cases reporting to have ever smoked was significantly higher than that of controls, as was the quantity currently smoked. The cases' smoking behaviour was also positively correlated with their percentage of time unwell. Bipolar cases also reported significantly higher levels of alcohol and caffeine consumption, with a significant association for both cases and controls between smoking and heavy alcohol and caffeine consumption. Finally, there was a significant association between bipolar disorder and self report of being overweight throughout life. Current BMI scores were also significantly higher in the cases than controls and this was not mediated by lithium treatment.

Conclusions: People with Bipolar Affective Disorder, compared to healthy controls, make a greater number of unhealthy lifestyle choices and have higher BMIs. This is similar to the pattern seen in those with schizophrenia. For clinicians looking after such patients this has important implications. Reasons for this warrant further investigation.

A12

Perceived support and psychological outcome following the 2004 Indian Ocean tsunami – a qualitative and quantitative study.

Vivien Norris, *The Zito Trust,* **Jonathan Bisson & Catrin Lewis,** *Cardiff University,* **Michael Howlett,** *The Zito Trust,* **Daniela Corallo,** *The National Audit Office &* **Ellie Davies,** *Cardiff Clinical Psychology Training.*

Objectives: To ascertain if there was an association between perceived support shortly after the tsunami and the development of mental health symptoms 15–19 months later, and to explore the factors that were felt to be important by those severely affected by the disaster. This study formed part of a larger review.

Design: Qualitative and quantitative data methods were employed using questionnaires, semi-structured interviews and a focus group. The questions explored participants' experiences and perceptions of support in the immediate aftermath and at time intervals up to the present. Survivors and family members were closely involved throughout the research process.

Methods: 116 UK citizens directly affected by the tsunami completed the survey. Twenty-nine adults and three children, selected purposively, took part in interviews and 10 participants comprised the focus group. Measures included rating scales of efficacy of support over time and completion of the Revised Impact of Event Scale (IES-r) and the Hospital Anxiety and Depression Scale.

Results: A triangulation approach to the data was adopted to ensure reliability. Agency or official support following the tsunami was perceived as poor overall. There was a strong relationship between perceived ineffectiveness of support within a few days of the tsunami and score on the IES-r (predictive of PTSD) 15–19 months later. The strongest themes were that practical support provided in a humane way was perceived as effective and that uncoordinated support, poor communication and limited accessibility of support and information were perceived as ineffective.

Conclusions: Improved planning of co-ordinated, flexible, multi-agency responses to traumatic events is required. Psychosocial components should be fully integrated with other aspects of the plan. There is a need for a basic level of training in effective communication for all providers of assistance following traumatic events.

Cognitive

B01

The enhancement of everyday prospective memory by rosemary essential oils.

Bryony Vallance, Thomas Heffernan & Mark Moss, *Northumbria University.*

Objectives: This study was designed to assess the olfactory impact of the essential oil rosemary upon everyday prospective memory in healthy volunteers. Participants' performance on a PM battery was compared across ambient rosemary, basil and no-odour (control) conditions. Mood and strategy use were controlled for in the study.

Design: An independent-groups design was used with three conditions; an ambient rosemary, ambient basil or no-odour condition. Scores on the prospective memory tasks constituted the dependent measures. Anxiety, depression and the use of strategies were also recorded for possible use as control variables.

Methods: An opportunity sample of 45 University students were each randomly assigned to one of the three conditions. Each participant was asked to complete a video-based prospective memory (PM) task during which the person has to remember particular activities at particular locations as they appear on the video, with two additional PM tasks (remembering to take some sweets away with them at the end of the testing session and remembering to e-mail the principal investigator within two days) to provide some further details. Mood was measured using the Hospital Anxiety and Depression Scale (HADS) and a strategy scale was used to measure strategy use.

Results: A series of ANOVAs revealed no between-group differences in terms of depression, anxiety, or strategy use, although an age difference was approaching significance. An ANCOVA (controlling for age) revealed a significant difference across the conditions in terms of PM performance. Pairwise comparisons revealed that the Rosemary condition led to significantly better performance on the PM tasks when compared to the Basil and no-odour controls.

Conclusions: These findings indicate the aroma of the essential oil of Rosemary can lead to an enhancement in everyday PM, compared to ambient Basil aroma no-odour control conditions.

B02

Real world memory and executive processes in cannabis users and non-users.

John E. Fisk, *University of Central Lancashire &* **Catharine Montgomery,**
Liverpool John Moores University.

Objectives: The relationships between executive processes, associative learning and different aspects of real world memory functioning were explored in a series of studies contrasting the performance of cannabis users and non-users. Aspects of real world memory functioning are known to recruit prefrontal executive resources as well as medial temporal processes. Cannabis-related deficits in these areas might be expected to produce knock-on effects resulting in impaired real world memory performance.

Design: A between-participant design was used with cannabis users versus drug naive individuals constituting the levels of the independent variable. Dependent variables were various measures of real world memory functioning, executive component processes, and associative learning.

Methods: Up to 46 abstinent cannabis users and 45 non-user controls participated in the studies. Opportunity sampling was used. Measures of the separable executive component processes including random letter generation (measuring inhibition), computation span (measuring updating), verbal fluency (an indicator of the efficiency of access to semantic memory), and the plus-minus and number letter tasks (representing switching) were administered. Participants also completed tests of paired associate learning, everyday memory, prospective memory, and cognitive failures.

Results: Relative to non-users, cannabis users were found to be impaired in several aspects of real world memory functioning. No other group differences were apparent. Aside from the cannabis-related variance, the updating executive component process was found to contribute significantly to different aspects of real world memory performance. There was less evidence that the remaining executive component processes played a role in supporting real world memory. The efficiency of access to semantic memory was significantly associated with outcomes on the associative learning measure. Measures of associative learning including immediate recall were unrelated to real world memory performance.

Conclusions: The results support the concept of a fractionated executive system contributing differentially to other cognitive processes.

B03

Retrieval-induced forgetting and unwanted thought intrusions.

David Groome, Nina Grant, Jeremy Thorne, Amy Brown & Karen Hall,
University of Westminster.

Objectives: The act of retrieving an existing memory has been found to inhibit the recall of related memories, a phenomenon known as retrieval-induced forgetting (RIF). The purpose of the present study was to investigate the hypothesis that individuals with a strong RIF mechanism might be better at suppressing unwanted intrusive thoughts.

Design: The relationship between RIF and the prevalence of intrusive thoughts was investigated using a correlational design.

Methods: 58 normal participants completed three different questionnaires to measure their susceptibility to intrusive thoughts. Their susceptibility to RIF was measured using the conventional procedure (Anderson *et al.*, 1994).

Results: The results showed a strong RIF effect, but no significant correlations were found between RIF strength and any of the three measures of intrusive thoughts.

Conclusions: These findings offer no support for the hypothesis that RIF assists the suppression of intrusive thoughts, but they are consistent with other recent findings and with a recently proposed two-process model of inhibition.

B04

Visual processing and attention-engaging properties of faces viewed in profile.

Rebecca Semmens-Wheeler & Patricia Roberts, *University of Bedfordshire.*

Objectives: This study investigated whether faces presented in profile would engage attention as much as faces presented in the coronal view, and whether they would be processed faster than other, non-face objects. It was hypothesised that coronal view and profile view faces present as distractor objects would slow response times to other categories present as targets, but that there would be no significant difference between the amount that they slowed them.

Design: A repeated measures design was used, so that each participant served as their own control, thus reducing the possibility of secondary and error variance. Order effects were counterbalanced by randomising the presentation of each display of objects. Response times were measured as a function of three main conditions: singleton distractor presence/absence, distractor category (in the distractor-present condition) and target category.

Methods: 22 randomly-selected students from the University of Bedfordshire participated in the experiment, which consisted of four blocks of 72 trials. In each trial, a category word was presented, followed by a display consisting of a target object (in a green frame) and five irrelevant objects (in blue frames). On half of trials, one object was present as a distractor singleton (in a red frame). Participants made a speeded forced-choice response indicating whether the target object matched the category word previously displayed.

Results: An ANOVA revealed that coronal and profile view face targets produced significantly faster RTs than non-face targets, regardless of distractor singleton presence. Profile view faces produced the biggest cost to RTs when present as a distractor object, followed by clothes and coronal view faces.

Conclusions: This experiment has demonstrated that the visual processing of faces presented in the non-canonical profile view is mandatory, even under conditions of high perceptual load, and compared with faces viewed in the canonical coronal view, providing further support for the theory that face processing is special.

B05

Cultural influence on self-face recognition: An ERP Study.

Jie Sui & Chang Hong Liu, *The University of Hull.*

Objectives: event-related potentials (ERPs) were employed to elucidate whether culture can influence self-face recognition and the underlying neural substrates. The goal will be accomplished by comparing neural activities to the self-face recognition following the independent and interdependent self-construal priming.

Design: This study follows a 3 x 2 x 2 factorial within-participant design. The three variables are prime, face, and attention. Participants completed three types of priming tasks by circling the pronouns or nouns. After each priming task, they performed a face-recognition task, in which they were instructed to identify orientations of self or a familiar faces under attended and unattended conditions.

Methods: 20 participants were primed with independent self-construal, interdependent self-construal, and neutral essays. The pronouns ('I', 'we', etc.) in the essays are manipulated to prime independent or interdependent self-construal. Neutral primes (e.g. 'area', 'park', etc.) that are unrelated to either type of the self were used as baselines. Following the priming procedure, participants were asked to complete a face identification task while ERPs will be recorded.

Results: ERP results showed that the neural activity associated with self-face recognition was influenced by self-construal. Priming independent self-construal resulted in a negative component with greater amplitude at 108-128 ms over the frontal areas in response to own face relative to familiar faces. ERPs to self-face were also characterised by a positive activity with lower amplitude at 150 to 190 ms over the frontal and central areas than those to familiar faces.

Conclusions: These results suggest that the neural activity associated with self-face recognition can be influenced by cultures that emphasise either independent or interdependent self-construal.

B06

Memory impairment by irrelevant speech and non-speech sounds: Matching acoustic complexity.

Marie Cahillane & Nigel Holt, *Bath Spa University,*
Clive Frankish, *University of Bristol,* **Lance Workman,** *Bath Spa University.*

Objectives: The research examined the relative disruptiveness of speech and non-speech sounds on a serial recall task. Sounds were matched for acoustic complexity, but not intelligibility. Previous research has manipulated the phonological intelligibility of speech, but has not controlled for acoustic complexity across auditory conditions (c.f. Tremblay *et al.*, 2000).

Design: A repeated measures design was used to compare effects of clear speech and spectrally rotated speech (recorded nonsense words), generated by the signal processing technique of spectral rotation (Blesser, 1972) which in some cases can remove the intelligibility of speech, whilst maintaining its temporal and spectral structure and therefore not confounding spectral complexity. High and low frequencies of sounds were rotated around a selected frequency, so sounds were mirror images of unaltered stimuli.

Method: In part 1, 12 participants completed a perceptual identification task to screen the intelligibility of a bank of spectrally rotated non-words. Four non-words were chosen, two which were not heard as speech and two untransformed non-words that were clearly intelligible. In part 2, thirty participants completed a serial recall task in the presence of irrelevant speech, spectrally rotated speech and in silence as a control.

Results: An ANOVA revealed a main effect of sound on serial recall ($F_{(2, 46)}=11.754$, $p<.001$). Pairwise comparisons show clear speech disrupted serial recall significantly more than rotated speech ($p<.01$) and a silent control ($p<.001$). However, the number of serial recall errors produced under rotated speech compared to silence did not differ significantly.

Conclusion: The data indicate that phonemic content of irrelevant speech is an important factor rendering speech more disruptive than non-speech sounds. Findings are discussed in terms of the 'changing-state hypothesis', which argues acoustic variation, not phonology, determines the level of disruption (Jones, Beaman & Macken, 1996).

Memory for faces receives greater benefits from active exploration than memory for non-face objects.

Bente Synnove Hansen, Chang Hong Liu & James Ward, *The University of Hull.*

Objectives: Research on face recognition has mainly relied on methods where observers are relatively passive viewers of face stimuli. Recent evidence, however, suggests that actively exploring three-dimensional (3D) face stimuli at the time of encoding can facilitate recognition performance (Liu & Ward, 2005). The purpose of the present study is to determine whether this advantage is more or less specific to faces. We tested the hypothesis that actively controlling the views of 3D stimuli may produce greater benefit for recognition of faces than for recognition of objects.

Design: We used 3D faces and chairs and evaluated recognition memory of these under active and passive conditions. We chose chairs because they have been used in prior studies for comparison between face and object recognition. The mode of exploration (active vs. passive) was a between-participant factor, whereas the object category (faces vs. chairs) was a within-participant factor.

Methods: We employed a standard old/new recognition task in a yoked design. Participants in the active condition explored 3D views of faces/chairs via a joystick during the training and test sessions of the task, whereas participants in the passive condition simply viewed the replay of the same sequence of face stimuli generated by the active observers. A total of 106 participants were evenly assigned to one of these two conditions.

Results: Actively controlling the views of 3D stimuli created better accuracy results for both faces and chairs. However, the benefit for faces was greater than that for chairs.

Conclusions: The study shows that active exploration may play a more prominent role in face recognition than within-category object recognition.

Cross-linguistic transfer of morphological awareness to English: Differences between Malay-L1/English-L2 and Mandarin-L1/English-L2 Bilinguals.

Susan Rickard Liow & SZE Wei Ping, *National University of Singapore.*

Objectives: Standard Malay has an alphabetic-syllabic script and a rich transparent affixation system whilst Mandarin comprises morpho-syllabic compounds and has a logographic script. To test for differences in cross-linguistic transfer of morphological awareness, we investigated knowledge of derivational suffixation and word compounding by two groups of ESL bilinguals: Malay-L1/English-L2 and Mandarin-L1/English-L2.

Design: Mandarin-L1 (N=30) and Malay-L1 (N=27) bilinguals, aged 19–24 years, completed two tasks in English: (1) a morpheme counting designed to test relational knowledge of morphemes, and (2) a legality judgment designed to test distributional knowledge of word-formation principles. Computer presentation with yes/no decision latency was employed for both tasks.

Method: The 57-item morpheme counting task (yes=1 morpheme) comprised 20 mono-morphemic and 20 bi-morphemic words, matched for word frequency and length, plus 17 prefixed words added as foils. The 76-item legality judgement task (yes=legal) comprised 56 nonwords with two within-participants factors (suffixation vs. compounding, legal vs. illegal) crossed to yield four conditions plus 20 word foils.

Results: The overall English proficiency was equivalent for the two groups of bilinguals, but despite regular and prolonged exposure to English (>14 years in an English-medium education system), performance was consistent with the morphological structure of the participant's first language, i.e. Malay-L1 speakers were more accurate at counting suffixed words, whilst the Mandarin-L1 speakers were generally better at judging the legality of compounds in English.

Conclusions: These results provide evidence of enduring non-unitary cross-linguistic transfer of morphological awareness from a bilingual's first language to English.

B09

Eye movements in response to auditory stimuli: A prosaccade versus antisaccade advantage.

Matthew Kean & Trevor J. Crawford, *Psychology Department, Lancaster University.*

Objectives: Saccadic eye movements towards a sudden-onset stimulus ('prosaccades') are typically faster and less error-prone than saccades directed to an alternative location ('antisaccades'). The source of this prosaccade advantage (PA) is unclear. We investigated whether (a) a visual imperative ('target') stimulus, (b) the involvement of working memory, and (c) oculomotor reprogramming are necessary to elicit the PA.

Design: A peripherally presented auditory signal was used as the target. In 'standard' conditions, participants were required to saccade towards or away from the target, depending on instructions (i.e. saccade direction was unpredictable). In a 'unidirectional' condition, participants executed a saccade in one direction only (e.g. to the left) on detection of the target. The unidirectional condition minimises the involvement of working memory, and eliminates the need for oculomotor reprogramming on antisaccade trials.

Methods: Eighteen undergraduates undertook three blocks of 40 trials: standard prosaccade, standard antisaccade, and unidirectional. Exposure to the three blocks was counterbalanced. The tone – presented 18° from fixation – sounded from the left or right with equal probability. Three LEDs, present throughout each trial, functioned as fixation and target place-markers.

Results: An ANOVA revealed significantly faster saccadic latencies on prosaccade trials. This effect was still present, albeit smaller, in the unidirectional condition. In the standard conditions only there was a higher rate of directional errors on antisaccade trials.

Conclusions: A visual stimulus is not necessary to elicit a PA. The findings also suggest that oculomotor reprogramming on antisaccade trials is not necessary to explain the PA, and cast doubt on the necessity of working memory as a factor. We conclude that attentional reorientation and – to a lesser extent – oculomotor inhibition are sufficient to explain the PA.

Isn't it about time? Effects of prescriptive/descriptive task designs and relational complexity on people's ability to understand and derive relations between temporally sequenced stimuli.

John M. Hyland, *University of Ulster at Coleraine,* **Denis O'Hora,** *National University of Ireland Galway,* **Julian Leslie,** *University of Ulster at Coleraine.*

Objectives: The current study investigated adults' ability to understand and derive temporal relations of increasing relational complexity between stimuli. Furthermore, we sought to determine the effects of prescriptive and descriptive task types on relational task performance. It was hypothesised that relational task type would interact with relational complexity to determine overall task performance.

Design: A 2 (group) * 4 (level) design was used for this experiment. One group began the testing session by completing a prescriptive relational task followed by a descriptive task. This group continued in this order across the four levels of increasing complexity. The alternative group completed tasks in increasing complexity but started with a descriptive followed by a prescriptive task.

Methods: Thirty adult participants were recruited for this experiment. Descriptive tasks involved the participants seeing a temporal sequence of flashing geometric images, after which they were required to respond by pressing 'yes' or 'no', depending on whether the relational statement on the bottom of the screen (e.g. triangle 'before' square 'after' circle) corresponded to the sequence of shapes. Prescriptive tasks involved participants seeing the relational statements and then clicking the shapes on the screen in the order asserted by the statement.

Results: Differences in the number of correct relational responses and reaction times of these responses were observed between the two groups across the four levels of relational complexity.

Conclusions: Results provide a greater understanding of the factors involved in temporal relational responding and adults' ability to comprehend relationally complex tasks. These findings have considerable applied implications in so far as they suggest methods by which we can enhance the cognitive skills required to understand relationally complex tasks and, perhaps, increase measured verbal intelligence.

B11

Verbalisation and working memory aid effects on insight and non-insight problem solving.

E. Fioratou & K.J. Gilhooly, *University of Hertfordshire.*

Objectives: The effects of verbalization (V) (i.e. thinking aloud versus not thinking aloud) and working memory aid (WM) (i.e. paper-and-pen use versus no such use) on problem solving performance were investigated. On one hand, direct concurrent verbalisation has been widely used in the study of cognitive processes underlying non-insight problems (Ericsson & Simon, 1984). However the efficacy of verbalisation in insight problems has been questioned because of verbal overshadowing (Schooler, Ohlsson & Brooks, 1993). On the other hand, the role of WM has been well established in non-insight problem solving only. Furthermore, no explicit effect of verbal versus spatial problems has been investigated before.

Design: This was a 2 x 2 x 2 x 2 mixed design, with two within-subjects factors, insight versus non-insight and verbal versus spatial problems, and two between-subjects factors, V versus no V and no WM aid versus WM aid. Participants were randomly assigned to four conditions: V & WM, V and no WM, no V and WM, and no V and no WM, with 20 participants in each.

Methods: Each participant attempted to solve all eight problems and was allowed five minutes for each problem. Those in the V conditions were prompted to verbalise every 20 seconds.

Results: Solution rates and times were comparable between the four conditions, suggesting that verbal overshadowing did not occur for both verbal and non-verbal insight and non-insight problems, and also that working memory aid was redundant.

Conclusions: The results suggest that verbalisation is a valid tool in investigating insight and the absence of verbal overshadowing further supports the similarity of insight and non-insight processes.

B12

Adding zest to difficult journeys: Odour effects on simulated driving performance.

G.N. Martin & J.A. Cooper, *Middlesex University.*

Objectives: To examine the effect of exposure to pleasant and unpleasant odour on simulated driving performance.

Design: A 2 (sex) x 3 (odour) x 3 (level of task difficulty) mixed design was employed.

Methods: Sixty healthy, non-smoking young adults completed a Sony Playstation simulated driving game while exposed to the ambient odour of lemon (pleasant condition), machine oil (unpleasant condition), or no odour (neutral/control condition). The experiment lasted approximately 15 minutes and participants navigated their way around a driving track or course, via a computer monitor and keyboard, under three levels of difficulty (novice/easy, intermediate and difficult). There were 10 men and women in each of the odour conditions. The odour was delivered into a small but comfortable testing suite via an AromaCube, a device designed for odour diffusion. Participants were tested individually. Dependent measures were overall driving performance, driving speed, braking competence, driving direction, car positioning and acting on aural instructions (where participants were given on-going, formative feedback on their performance).

Results: Exposure to the odour of lemon was associated with significantly better braking performance in men and women, compared with exposure to no odour. At the intermediate and difficult levels of the task, men's ability to brake, direct their driving, position the car effectively on the road and act on instructions was significantly better than women's during exposure to the lemon odour. Men were also better at the intermediate levels of the task when exposed to the odour of lemon than machine oil or no odour. None of these effects was associated with significant odour-dependent mood change.

Conclusions: The results demonstrate that exposure to a pleasant odour (lemon) can significantly facilitate braking performance during a simulated driving exercise and can significantly influence other aspects of simulated driving performance, especially in men. Possible explanations are suggested.

B13

Working memory processes: An analysis of response-time-patterns for younger and older adults.

Cora Titz & Marcus Hasselhorn, *University of Goettingen, Department of Educational and Developmental Psychology.*

Objectives: For two working memory (WM) span tasks, task-processing times and response durations of spoken recall were investigated. Response-timing can provide clues to the strategies that are used in WM-tasks. Differences in WM processes can produce specific different patterns of response times. Due to developmental changes in cognition over the life-span it was hypothesised that both the duration of various segments of spoken recall and of the time that is taken to resolve tasks and memorize words varies dependent on age and memory load.

Design: In a cross-sectional design younger and older participants completed a reading span task (RST) and an operation span task (OST). Memory load was varied by increasing the number of words that had to be memorized.

Methods: Sixty-four younger and 64 older adults verificated 45 sentences in the RST and 45 equations in the OST in a counterbalanced order. After task-verification the word that had to be memorized appeared on a computer screen. Memory load ranged from 2 to 4. Processing-time for verification and word memorizing was measured by key pressing on a keyboard, spoken recall durations were recorded with MP3 players.

Results: Analysis of variance revealed increasing recall durations with increasing memory load. This pattern was also given for task verification and word memorizing. During task-processing a more significant increase in word memorizing time but not in task-verification time was obtained for older adults.

Conclusions: A strategic difference between younger and older adults may be concluded from older adults' extended word regarding times with increasing memory load whilst this pattern was not found for task-verification times. Verification may totally capture older adults' attention so that, unlike younger adults, they were not able to rehearse memory-items while verifying the tasks; instead, they may have tried to rehearse former items during word presentation.

B14

Devising a new memory-based measure of dream recall: The Dream Memory Questionnaire and its composition.

Caroline L. Horton & Martin A. Conway, *University of Leeds.*

Objectives: A number of measures of dream recall exist, varying from laboratory awakenings in REM sleep to simple self-report ratings about the frequency of one's dreaming. As memory abilities are rarely investigated as an account of variance in dream recall, a new standardised measure of dream recall was required. In addition, a self-report measure was deemed as appropriate considering the problems of ecological validity and vastly increased dream recall when reporting dreams from a sleep lab.

Design: A standardised measure of dream recall has been devised consisting of questionnaire items relating to general memory ability, sensations of memory and dreaming experiences. It was designed to investigate a range of memory phenomena, with at least 3 items corresponding to each component or sensation of memory.

Methods: A 90 item questionnaire was constructed (plus demographic measures) and administered to a sample of 233 individuals. In addition participants were asked to recall three of their most recent and three of their earliest dreams.

Results: Through an iterative process of reliability analysis a succinct 30-item Dream Memory Questionnaire emerged with a clear factor structure. The factors contributing to dream recallability were: awareness of dreaming; daydreaming; comprehensibility of dream sensations upon waking; déjà-states; comprehensibility of dream content; and senses. All questionnaire items loaded onto one of these factors. The factors have also correlated with the alternative measure of dream recall (detail and episodic richness ratings of the generated dream reports).

Conclusions: These results demonstrate that dream recall is related to autobiographical memory phenomena. This study has produced the first psychometrically validated questionnaire measure of dream recall, whilst providing insights into the reliability and validity issues surrounding research in dream recall.

B15

Individual differences in linguistic priming.

Sarah Haywoood, Holly Branigan, Janet McLean & Akiyo Shibuya,
University of Edinburgh.

Objectives: This study investigated whether some people are more susceptible to linguistic priming manipulations than others. We focussed on syntactic priming, which is a phenomenon whereby speakers reuse recently-encountered grammatical structures. For example, after reading a prime sentence like 'The chef handing the jug to the swimmer', speakers tend to produce a similar structure (The waitress offering the apple to the monk) rather than an alternative (The waitress offering the monk the apple). Anecdotally, some speakers are more primeable than others. Two experiments investigated whether these individual differences are stable over time, and whether they generalise across different linguistic structures.

Design: Experiment 1 used a test-retest design to see whether individual speakers primed to the same extent in two testing sessions (at least one week apart). In Experiment 2, we correlated priming scores for two different syntactic structures, to find out whether individual speakers were influenced to the same degree by both.

Methods: In both experiments, participants played a computerized picture-description game. They read a prime sentence, and then described a picture designed to elicit the same kind of structure as the prime. Experiment 1 involved the '…offering the apple to the monk/…offering the monk the apple' alternation. Experiment 2 additionally involved the alternation between actives (The doctor is kissing the artist) and passives (The artist is being kissed by the doctor). Each experiment involved 48 student volunteers.

Results: In Experiment 1, individual speakers were primed on 0-100 per cent of trials. Their priming scores were significantly correlated at two points in time (r=.24, p=.052). In Experiment 2, priming scores for two different syntactic alternations were significantly correlated (r=.26, p=.036).

Conclusions: Taken together, these results suggest that there are stable individual differences in syntactic priming, and that there is a general dimension of syntactic primeability on which speakers differ.

B16

Working memory functions and individual differences in arithmetical achievement.

Thorsten Roick & Marcus Hasselhorn, *University of Goettingen, Germany.*

Objectives: Recent research has focused on working memory processes as a predictor for arithmetical achievement in primary school. In view of the multicomponential working memory model, findings emphasize the role of the central-executive for arithmetical disability, which itself appears to be mediated by a developmental delay. The present study investigated whether individual differences of selected working memory functions can be used to explain individual differences in arithmetical achievement.

Design: A cross-sectional design was used. Participants completed in two single sessions working memory tasks in a counterbalanced order. Alongside from age-matched control groups of students performing well or with average performance in arithmetic, there was also a younger ability-matched control group included to investigate the cause of the difficulties.

Methods: Participants were 48 third graders (16 students in each group with good, average and weak performance in arithmetic) and 17 second graders. The second graders performed in arithmetic tasks like the weak-performing third graders. The groups were established from a pool of 186 third graders and 106 second graders, based on their performance in a basic arithmetic fact test, and were controlled for intelligence, reading performance, sex and age. Working memory performance was examined with a simple and complex word span task and a block-tapping span task.

Results: ANCOVA analysis revealed that differences in the visual-spatial working memory and the central-executive between the well-performing and weak-performing third graders are not due to specific deficits of the weak-performing students, but rather dependent on a functional power of the well-performing students. Moreover, the problems of the weak-performing students seems to depend on a developmental delay.

Conclusions: Working memory differences seem not to be an essential variable for weak arithmetical performances in primary school, but a good working memory performance might be an advantage in obtaining a good arithmetical performance.

B17

Integrating physical and social cues when forming face preferences: Differences among low and high anxiety individuals.

C.A. Conway, *University of Aberdeen,* **B.C. Jones,** *University of Aberdeen,* **L.M. DeBruine,** *University of Aberdeen,* **A.C. Little,** *University of Stirling,* **J. Hay,** *University of Aberdeen,* **L.L.M. Welling,** *University of Aberdeen* **& D.I. Perrett,** *University of St. Andrews.*

Objectives: We aimed to establish whether anxious and non-anxious individuals differ in how they integrate physical and social cues when forming face preferences.

Design: The study had a mixed design with within-subjects factors: apparent health of face (healthy, unhealthy), direction of pro-social behaviour (towards participant, away from participant) and between-subjects factor: participant anxiety level (low, high).

Methods: Participants (N=128, 71 female) viewed healthy-looking and unhealthy-looking faces which were either engaging or disengaging with the viewer (i.e. were either directing a smile towards the viewer or away from the viewer). Participants rated the attractiveness of these images using a 1 (low) – 7 (high) scale and completed two anxiety questionnaires (the Beck Anxiety Inventory and STAI).

Results: Low anxiety individuals demonstrated preferences for facial cues associated with social engagement (i.e. viewer-directed smiles) from healthy faces, but not from unhealthy faces. By contrast, high anxiety individuals preferred social engagement from both healthy and unhealthy faces. Anxiety levels were positively related to the strength of overall preferences for social engagement, indicating that anxious individuals were not simply less discriminating in their face preferences generally.

Conclusions: Collectively, our findings demonstrate that preferences for social engagement can be modulated by the apparent health of faces and demonstrate that systematic variation among individuals exists in the extent to which this modulation occurs.

B18

Inducing opposite after effects for 3/4 and front views of faces: Evidence for view-specific coding of face shape.

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L.M. DeBruine, *University of Aberdeen,* **A.C. Little,** *University of Stirling,*
C.A. Conway, *University of Aberdeen* **& B.C. Jones,** *University of Aberdeen.*

Objectives: Contingent adaptation is thought to reveal specialization of neural machinery. Here we investigated whether neural mechanisms for coding face view also code other aspects of face shape.

Design: The study was a between-subjects design, where participants were adapted to one of two conditions: (1) adaptation to raised mouth position in 3/4 face views and lowered mouth position in front views, or (2) adaptation to lowered mouth position in 3/4 face views and raised mouth position in front views.

Methods: Participants (N=54, 34 female) were shown pairs of faces in 3/4 left and front viewpoints. Each pair of images depicted the same individual from the same viewpoint with one image in each pair having a raised mouth position and one a lowered mouth position. Participants were instructed to choose which face looked more normal and how much more normal it appeared. Immediately after, participants were randomly assigned to either condition 1 or condition 2 and were adapted to a series of faces. Next, the participants completed a post-adaptation test that was identical to the pre-adaptation test.

Results: The magnitude and direction of change in perceived normality between the post- and pre-adaptation tests for each viewpoint were analysed using a mixed design ANOVA. The findings reveal that it is possible to simultaneously induce aftereffects in opposite directions for 3/4 and front views of faces with manipulated mouth position.

Conclusions: These dissociable aftereffects for different views of faces support the proposal that neurons that code face view can also code other aspects of face shape.

B19

Developmental dyslexia, visuospatial ability and learning style.

Dr Nicola Brunswick & Dr G. Neil Martin, *Middlesesex University.*

Objectives: The current study sought to explore style of processing, left-right confusion and visuospatial ability in students with developmental dyslexia and in unimpaired readers (art students, psychology students, and business studies students). It was predicted that relative to the unimpaired students of psychology or business studies, dyslexic readers would adopt a more visual approach to their work and display superior visuospatial skills; no such difference was expected between the dyslexic students and the art students.

Design: An independent-groups design was employed.

Method: 22 art students (mean age=29.1 years), 10 psychology students (mean age=22.3 years), 10 business students (mean age=23.3 years) and 11 students with developmental dyslexia (mean age=22.8 years) completed the Style of Processing Scale, the Left-Right Confusion Questionnaire the Reading Ability Checklist, and the Vandenberg and Kuse Mental Rotation test.

Results: Preliminary univariate ANOVAs found that the dyslexic students adopted a significantly less verbal learning style than either the art students or the psychology students, but no significant difference was found in their use of visual processing strategies. The dyslexic students also reported significantly greater incidence of left-right confusion than did the psychology students; a similar difference between the dyslexic students and the business students proved non-significant (p=0.052). No such difference was found between the dyslexic students and the art students.

Conclusions: These data failed to support the link between dyslexia and superior visuspatial ability or the adoption of a visual learning style. Previous evidence of enhanced visuospatial skill in dyslexia (reported by this research group) has been confined to dyslexic men; the dyslexic students in this study were female. A larger study might establish whether differences in learning style may be found between male dyslexics and unimpaired readers to mirror these previously reported differences in visuospatial ability.

Consciousness and Experiential

C01

Measuring identity disturbance: Development of a questionnaire designed to assess subjective sense of self,

Christopher Basten, Russell Meares, & Stephen Touyz, *University of Sydney; Westmead Hospital.*

Objectives: There are no existing scales devoted to the assessment of one's sense of self, which is one aspect of identity and is central to some personality and affective disturbance. This series of studies investigated the psychometric properties of a new self-report scale designed to measure subjective sense of self. Several means of measuring the validity and reliability of the tool were employed.

Design: Several cohorts, representing different samples of interest, were asked to complete various forms of the new questionnaire, along with concurrent measures. Some were asked to complete the questionnaire twice with a view to obtaining test-retest reliability.

Methods: An initial pool of potential questionnaire items was given to experts to rate, thus deriving the first version of the questionnaire. This was administered to samples of psychiatric patients and non-patients. This data was used to derive the final version of the tool. This final version was administered to various samples: patients with eating disorders, patients with depression, university students and a general community sample.

Results: Factor analysis revealed a factor structure of the new tool that is consistent with theoretical models of Identity and sense of self. The new tool has very strong test-retest reliability and the factors have sound internal consistency. Regression analysis revealed that some of the factors predicted response to treatment, especially in those with eating disorders. As predicted, the new tool did correlate strongly with measures of Borderline Personality symptoms and Alexithymia, but only modestly with measures of self-esteem and depression.

Conclusions: Sense of self is a construct that can be reliably measured in a brief self-report form. A new tool has been developed with sound reliability and construct and concurrent validity. Sense of self is a predictor of response to treatment and is associated with the presence of affective and personality disturbance.

Developmental

D01

The capacity to understand non-verbally expressed emotion and its relationship to parental aggression and attachment style.

Nyla Sadaq & Antigonos Sochos, *University of Bedfordshire.*

Objective: The aim of this study was to explore the role of parental aggression and harsh discipline in the adult offspring's capacity to understand non-verbal expressions of emotion. The relationship of these two constructs with adult attachment was also investigated.

Design: A cross-sectional design was adopted, assessing retrospective reports of parental discipline and parent-child conflict, the capacity to understand non-verbally expressed emotion, and attachment style. Despite its obvious limitations, the design was expected to provide some basic information at this exploratory stage.

Method: A convenience sample of 70 undergraduates (26 men and 44 women) were recruited in the University of Bedfordshire (mean age=25.54, sd=7.31). The following questionnaires were used: an adapted version of the Parent-Child Conflict Tactics Scale (Strauss & Hamby, 1997) to assess childhood experience retrospectively, the Diagnosic Analysis of Non-Verbal Accuracy – Face and Posture (Nowicki & Duke, 2000), and the Adult Attachment Scale (Collins & Read, 1990).

Results: According to the findings, recollections of corporal punishment were associated with a lower capacity to understand posturally expressed emotion, while recollections of physical abuse were related to a decreased ability to understand facially expressed emotion, particularly anger. Attachment insecurity was related to both psychological and physical parental aggression, a lower capacity to understand facially expressed emotion, but a higher capacity to understand emotion expressed through posture. Pearson *rs* ranged from 0.38 to 0.25.

Conclusions: The empirical findings confirmed our general expectation that parental aggression would compromise both the capacity to understand emotion and attachment security in the offspring. Moreover, they may suggest that coercive parenting can bring about the development of different self-protective strategies in the individual in relation to decoding emotion.

D02

The effect of frustration on magical thinking in primary school children.

Christina Meredith & Noshin Emamiannaeini, *BCUC (Buckinghamshire Chilterns University College).*

Objective: The study investigated whether children's magical thinking would be affected before and after participating in a frustrating task, using a three dimensional version of the Stroop test. The prediction was that as the children became more frustrated their levels of magical thinking would increase.

Design: 32 children (15 males and 17 females) aged between 8 and 11 (mean age 9.6 years) participated in the study. The independent variable was the Stroop task and the dependent variable was magical thinking that consisted of two levels, 'thought' magical thinking and 'action' magical thinking. Levels of stress and arousal were also measured.

Method: The study consisted of two conditions. In the congruent condition four coloured pots (red, green, yellow and blue) were used and labelled with the correct colour of the pot. In the second condition, the incongruent condition, the pots were the same colours but labelled with an incorrect label, for example the red pot had a label saying 'green' and the word was made from blue foam. Twenty sweets, the same colours as the pots, were given to each child that acted as counters to be sorted correctly and as quickly as possible by the children into the containers, the time pressure causing the child to become frustrated in the incongruent condition. The scores were calculated as correctly coloured sweets in the correctly coloured pot. The children were told they could keep the sweets that were in correctly coloured pots. A smiley faces scale was used to record frustration before and after the task and a Magical Thinking Questionnaire measured the frequency and type of magical thinking was also completed before and after the two conditions.

Results: A paired samples t-test showed an increase in 'action' magical thinking in the incongruent condition. A two-way ANOVA showed that females had significantly higher total magical thinking than males and that younger children had less correct scores than the older children which is consistent with Stroop test research as there were less correct scores in the incongruent condition. There was no increase in stress and arousal in any condition.

Conclusion: The stress and arousal questionnaire did not accurately measure the levels of frustration the children displayed during the incongruent condition although levels of magical thinking increased during the incongruent condition.

D03

Implicit learning of musical, but not linguistically-presented, steady-state grammars in ASD.

Jessica Ward, *Department of Psychology, Goldsmiths, University of London.*

Objectives: To identify and investigate one of the factors necessary for the development of musical talent: implicit learning of musical grammars.

Design: Studies have shown that general musical ability is preserved in children with autism. However, it is unclear whether the factors that comprise musical ability are equally and typically presented given that the cognitive profile of ASD individuals is uneven. This study examines the capacity of children with ASD to learn musical grammar, as compared with their capacity to learn linguistically-presented grammar, in a standard artificial-grammar familiarization task designed by Reber (1989).

Methods: Children (ages 10–17) with diagnoses of autism were recruited from and tested in English special high schools. Background information (Verbal-IQ, non-verbal-IQ, motor performance) gathered through psychometric testing and family musical background assessed through a parental-report questionnaire. A variation on Reber's (1989) steady-state grammar-learning task was used to assess learning of an auditorially-presented pseudo-linguistic stimulus and a musical stimulus. A typically-developing comparison sample, matched on non-verbal-IQ and age, has not yet been tested using the same procedures.

Results: Children performed at chance on the linguistic implicit learning task (t=1.936, p=0.073). However, they successfully learned the musical grammar, scoring significantly above chance (t=2.370, p=0.034). Results have not yet been gathered for typically-developing comparison children.

Conclusions: Children with ASD fail to learn a pseudo-linguistic grammar implicitly, yet they learn an identical grammar, presented in the musical modality, successfully. This provocative result lends support to the idea that children with autism prefer musical stimuli and learn it better than linguistically-presented stimuli.

D04

An ERP study on exploring semantic knowledge of Williams Syndrome: New insights from false memory studies.

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Objectives: The aim of this study is to explore the relationship between the use of context in individuals with Williams Syndrome (WS) and their semantic knowledge. Previous work has suggested that semantic priming in individuals with WS is similar to normal controls (Tyler *et al.*, 1997). In contrast, abnormal N400 components have been found in their processing of semantically anomalous sentences (Neville *et al.*, 1994). In order to clarify this inconsistency, this study was conducted.

Design: An auditory false memory paradigm was used to take both behavioural and neurophysiological (ERP) measures from three groups: children & adults with WS, mental-age matched children, and adults. Two phases were required in this task, study phase and recognition phase, respectively.

Methods: In the study phase, participants were asked to listen to orally presented word lists. In the recognition phase, they were asked to recognize orally presented words and decided if the words had been previously presented. The recognition phase involved three conditions: previously presented words in the study phase, non-presented words with semantic relatedness, and non-presented words without semantic relatedness. In the behavioural study, the dependent variables were RT and accuracy. In the ERP study, the dependent variable was the amplitude of the ERP response.

Results: Behavioural results indicated that people with WS displayed the same pattern of recognition as normal controls for semantically-related words. However, their neural correlates told a different story. Adults differentiated between semantically-related words and semantically-unrelated words, but the brains of people with WS yielded no such difference. Unlike adults, the clinical group showed a difference between studied words vs. semantically-related words.

Conclusions: Our findings suggest that in WS proficient behaviour camouflages a deviant neural pathway in context use. It is concluded that semantic organisation develops slowly in typically developing controls, and atypically in people with Williams Syndrome.

D05

Predicting resilience and exploring well-being: Towards an intervention that deals with consequences of relational aggression.

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University of Wales, Swansea.

Objectives: Relational aggression is consistently linked with significant long-lasting implications for the victim's well-being. Resilience is understood as positive adaptation in adverse circumstances. Promoting resilient thinking and behaviour patterns potentially improves the quality of life for at-risk individuals over longer periods of time. This provides a bottom-up approach to addressing and preventing stable patterns of victimization by relational aggression. With a view to establishing a baseline for developing a resilience-promoting training program the aim of this study was to identify predictive factors of resilience and explore the concept of well-being.

Design: A multi-method design has been employed to identify predictive factors of resilience and explore well-being.

Method: Participants were 149 undergraduate students. Handwritten narratives about the most important aspects in well-being were obtained prior to the completion of questionnaires and analysed using content analysis (Neuendorf, 2002). Quantitative measures were the resilience scale (Connor & Davidson, 2003), the Oxford Happiness Scale (OHS) (Hill & Argyle, 2002), the Cognitive Emotion Regulation Questionnaire (CERQ) (Garnefski & Kraaj, 2006) and the 10-item personality inventory (TIPI) (Gosling *et al.*, 2003). The reliability of the scales used was acceptable (Chronbach alpha=0.717 – 0.837).

Results: Qualitative data indicated that social aspects, health, purpose in life and attainment of goals play a predominant role in well-being, reflecting some item content of the OHS. Analysis of quantitative data indicated a direct link between well-being and resilience. To identify predictive factors of resilience multiple regression analysis was employed. Conscientiousness and perspective taking emerged to be significant positive predictors of resilience.

Conclusion: Considering the application of well-being within the present context, amendments to the OHS were suggested to better represent the distribution of factors contributing to well-being. More emphasis on social- and goal-related aspects was suggested. Perspective taking will be one focal aspect in working towards a resilience-promoting intervention.

D06

Adult attachment representations and theory of mind.

Elizabeth Meins, *Durham University* **& Maria Georgiou,** *Durham University &*
Intercollege Larnaca, Cyprus.

Objectives: Adults who have secure attachment representations are proposed to show greater ability to explain attachment figures' behaviour with reference to their internal states (Fonagy, Steele, Steele, Moran & Higgitt, 1991). This study investigated whether secure individuals' superior mentalising abilities generalised to situations other than discussions of attachment issues.

Design: The attachment security of all participants was assessed using the Adult Attachment Interview (AAI) and a self-report measure (Bartholomew & Horrowitz, 1991). Theory of mind was measured using the Hinting Task (Corcoran, Mercer & Frith, 1995), which assesses participants' ability to make inferences about the real meaning of story characters' ambiguous utterances.

Method: Participants were 53 (40 women, 13 men) Greek Cypriot college students (mean age, 20 years; range 18–30 years). Participants were seen twice. At time 1, they completed the self-report attachment measure, and a month later students completed the Hinting Task, after which the AAI was administered. AAIs were classified as secure, dismissing, preoccupied, or unresolved by a trained, reliable coder. The self-report measure involved participants choosing a description of the attachment category that best suited them: secure, dismissing, preoccupied, fearful. Two scores were derived from the Hinting Task: accuracy and completion time taken.

Results: Relations between attachment security and theory of mind were investigated using 2 (gender) x 4 (attachment category) ANOVAs. Neither AAI classification nor the self-report attachment category related to accuracy on the Hinting Task. Time taken to complete the Hinting Task was related to both attachment measures, with individuals classified as preoccupied on the AAI and via self-report taking longer than the other attachment groups to complete the task.

Conclusions: This research provides suggestive evidence that adult attachment representations relate to individuals' general mentalising abilities. Preoccupied individuals appear to be slower in processing internal state information.

D07

Does the heritability of reading ability vary with socio-economic status?

Emma Gore Langton, Barbara Maughan, Louise Arseneault, Alan Taylor, Avshalom Caspi & Terrie Moffitt, *MRC SGDP, King's College London, Institute of Psychiatry.*

Objectives: Reading ability is moderately heritable, and also varies according to social background. Recently, investigators have begun to explore whether genetic and environmental contributions may vary as a function of the environment. Tests in the field of cognitive ability have produced mixed results. In relation to reading, the only study published to date found decreased genetic and increased shared environment contributions at lower levels of parental education for middle-aged men. We looked at whether a similar phenomenon occurs for reading abilities in young children aged 7 years.

Design: We used data on 1116 nationally representative families with twins from the Environmental-Risk Longitudinal Twin Study. Initial visits took place when the children were aged 5 years and the first follow-up was at 7 years, with a retention rate of 98 per cent.

Method: Each twin completed the TOWRE non-word reading test during a home visit at 7 years. We created an SES-composite by combining data on the household's highest income, educational qualification and social class when the children were 5 and 7 years.

Results: In the full sample, twin correlations indicated that the heritability of reading was moderate (56 per cent), with a small shared environment contribution (26 per cent). Among children in the lowest 10 per cent of the SES distribution these values were reversed to 36 per cent and 51 per cent respectively. These results were confirmed using genetic model-fitting.

Conclusions: Twin studies confirm the importance of environmental as well as genetic influences on reading development. Our findings suggest that environmental influences – especially those shared within the family - may be particularly salient for reading ability in children from more disadvantaged backgrounds. To date, relatively little is known about the specific influences involved; our findings suggest that increased understanding of these environmental effects may be of particular importance for children from the least favoured social circumstances.

Educational & Child

E01

Mother's educational self-concept and associated involvement in children's educational experience in a low-income urban sample.

G.S. Jerzembek, K.S. Bullen & L.K. Watts, *University of Wales, Swansea.*

Objectives: The implications of socio-economic deprivation on educational attainment are well established. Early year's services such as Sure Start seek to promote children's development to optimize school attainment. Parenting factors are one important determinant of children's educational experience. The aim was to identify factors that promote children's early learning experience as a pilot study for larger-scale assessment. The mother's educational self-concept was expected to affect her interaction with her child and consequently, the child's early educational experiences.

Design: A multi-informant, multi-method design has been employed to identify links between the mother's educational self-concept and the child's early educational experiences.

Method: Participants were 12 mothers and their children (N=16) who were recruited via Sure Start facilities in South Wales. Semi-structured interviews were held with the mothers and analyzed with IPA (Smith & Osborn, 2003). Each mother-child pair completed a structured play task, which was videotaped and analysed with an adapted version of the Moss *et al.* (2004) interaction rating scale by two independent raters and two playworkers. The reliability of the interaction rating scale was high (Chronbach alpha=0.984).

Results: Qualitative interview data provided a link between the mothers' negative past educational experiences and the educational concept they held about their child. The concept was strongly influenced by the causal attribution of success or failure. Those who attributed their failure to a lack of effort saw themselves highly involved in their child's achievement. Interaction ratings indicated that mothers with such an efficacious educational concept engaged in higher quality interaction with their child.

Conclusion: The study highlights the importance of attending to the 'whole' child including parental self-concepts and related interaction behaviours within early years service provision. These preliminary results suggest specific factors to promote positive mother-child interaction and optimize children's early learning experience.

E02

Buoyancy: A key ingredient for 'everyday resilience'.

Andrew J. Martin, *University of Sydney.*

Objectives: Resilience has typically been characterised in terms of acute or chronic adversity. However, this does not address the many individuals who are faced with setbacks and challenges that are part of the ordinary course of life. This, it is contended, reflects 'everyday resilience' or 'buoyancy'. Previous research has demonstrated the importance of buoyancy in the academic domain at high school. To what extent is the need for buoyancy salient and important in other performance domains? The present study seeks to answer this question by examining buoyancy amongst young sportspeople and musicians.
Design: The study comprised two distinct samples of young sportspeople and classical musicians who could meaningfully report on adversities and challenges in the course of their performance life. Data were collected via a survey process and were cross-sectional in nature.
Methods: Young sportspeople (*N*=239) and classical musicians (*N*=224) were administered the Buoyancy Scale (adapted from the previously validated Academic Buoyancy Scale), along with a set of key correlates from the Motivation and Engagement Scale – Sport (MES-S) and Motivation and Engagement Scale – Music (MES-M).
Results: Confirmatory factor analysis using LISREL supported the hypothesised factor structure of the buoyancy scales in sport and music. Also presented are reliability and distribution properties of the scales. Using multiple-indicator multiple-cause (MIMIC) modelling, analyses explored mean-level effects for gender and age. Findings also demonstrated key relationships between buoyancy and the hypothesised motivation and engagement correlates; important in understanding the role of buoyancy in relation to other performance-relevant constructs.
Conclusion: Taken together, the findings of the present investigation hold not only substantive and methodological implications for researchers studying buoyancy in diverse contexts, but are also relevant to practitioners operating in contexts in which individuals are required to effectively deal with setback, adversity, and challenge in a target setting.

E05

The effect of synthetic phonics teaching on the reading and spelling skills of children from poor socio-economic backgrounds.

Joyce Watson, *School of Psychology, University of St. Andrews.*

Objectives: The purpose of this study was to examine whether synthetic phonics teaching, compared with analytic phonics teaching, reduces the disadvantage in reading and spelling experienced by children from poor socio-economic backgrounds.

Design: In a study of 5-year-olds, one group carried out a 16-week synthetic phonics programme, another group carried out an analytic phonics programme, and a third group carried out an analytic phonics/phonemic awareness training programme. After the first post-testing, the latter two groups carried out the synthetic phonics programme. The total sample was then followed up for a further six years to examine the development of their reading and spelling skills. Performance was compared with another sample of children who continued with an analytic phonics programme.

Methods: In sample 1, 300 children were drawn from eight schools in Clackmannanshire, whole classes being assigned to treatment conditions. In sample 2, 237 children were drawn from schools in another Scottish region. Reading and spelling were tested by the British Ability Scales Word Reading Test, and the Schonell Spelling Test.

Results: Using analysis of variance, we established for the Clackmannanshire sample that at the first post-testing the synthetic phonics-taught children read and spelt significantly better than the children in the two analytic phonics groups. No significant difference was found between synthetic-phonics taught children from advantaged and disadvantaged areas in word reading and spelling until the end of the seventh year at school. However, in the sample where children continued with an analytic phonics programme, we found that the children from disadvantaged areas had lower word reading and spelling skills than those from advantaged areas by the end of the second year at school.

Conclusions: Synthetic phonics teaching leads to better reading and spelling than analytic phonics teaching and reduces the underachievement experienced by children from areas of deprivation. The Primary National Strategy is now devising its own synthetic phonics programme.

E06

Teacher motivation and academic climate across cultures.

Robert M. Klasen, *University of Alberta,* **Wan Har Chong, Vivien S. Huan &
Isabella Y.F. Wong,** *Nanyang Technological University.*

Objectives: This paper explores the relationship of within-teacher factors (individual and collective efficacy, years of experience, level of collectivism), and student SES on academic climate in two contrasting cultures. Academic climate (or academic press) has been described as the degree to which teachers in a school set high but reasonable goals, students respond positively to these goals, and the administration supplies sufficient resources to attain these learning goals. Bandura's social cognitive theory provides the theoretical framework for this study of motivation in the workplace.

Design: The study is a correlational cross-cultural study that used survey methodology to assess the beliefs of teachers in Canadian and Singaporean secondary schools. The Canadian data were collected from volunteers at a teachers' convention in Western Canada; the Singaporean sample consisted of volunteers from schools representing four academic streams.

Methods: Participants were 503 secondary teachers from Canada (255) and Singapore (248) who completed a 50-item survey including well-validated measures of individual efficacy, collective efficacy, school climate, collectivism, and student SES. Structural equation modeling was used to examine the relative power of different predictors of school climate. After establishing baseline models for each country, multi-group analyses were performed by constraining the path weights between the predictors and the dependent variable to be equal across the two cultural groups.

Results: Teachers in Canada reported significantly higher levels individual and collective efficacy, level of collectivism, and student SES. For Canadian teachers, the path diagram showed SES as having the strongest direct influence on academic climate, with collective efficacy, level of collectivism, and experience also significantly influencing climate. In Singapore, academic climate was best predicted by level of collective efficacy, followed by individual efficacy, and SES.

Conclusions: Teachers' collective efficacy and students' SES were the only two variables that predicted academic climate in both countries. Academic climate was especially prone to the effects of SES in Canada, while in Singapore, academic climate was more strongly influenced by teachers' beliefs in their confidence to work together. Implications for theory and educational practice in cross-cultural contexts are discussed.

E07

Effective psycho-educational interventions for treating emotionally disturbed adolescents.

Brian Flynn, *Argosy University Hawaii, USA.*

Objectives: This research aims to identify effective psycho-educational interventions to treat emotionally disturbed adolescents (ages 11 to 18 years) and improve scientific knowledge.

Design: Computerized bibliographic searches were undertaken to identify relevant studies, in the PsycINFO database of international literature in psychology and related social and behavioural sciences, the British Education Index, the National Library of Medicine's Medline database, and the ERIC database. Studies which contained outcome data that enabled the calculation of effect sizes were included in a meta-analysis. This led to a consideration of a best-evidence perspective.

Results: An examination of the extensive literature in this field found that relatively little evidence-based or scientific research had been carried out over the past 25 years (1981 to 2006). This research did however identify a number of school-based interventions that were evidenced to be effective with emotionally disturbed adolescents. The meta-analysis of treatment outcomes identified self-management and self monitoring techniques that proved particularly effective.

Conclusions: Professional practitioners will have to go beyond the evidence: to adapt to local resource constraints, and; to avoid a 'one size fits all' approach and choose an intervention from a range of well evidenced interventions which is particularly likely to be effective in the problem context or ecology in hand, and; to consider the durability and transferability of interventions in field settings when delivered in less than ideal circumstances (often unexplored in the literature), and; to bridge the many gaps in the evidential base. Relevant action proposals for the improvement of current practice in treating emotionally disturbed adolescents and further research are described.

E08

The prevalence and correlates of cyberbullying in adolescence.

Ian Rivers, *Queen Margaret University College, Edinburgh* **& Nathalie Noret,** *York St. John University.*

Objectives: Research into the area of cyberbullying is still rather scarce and results in terms of gender differences and being a victim of such bullying are rather inconsistent. The aim of this study was to investigate the changing prevalence of cyberbullying over a five year period and any gender differences that may exist. This study also aims to examine the relationship between cyberbullying and other types of bullying and other correlates, such as feeling lonely in school, which may exist.

Design: This study draws upon the results of one aspect of a much larger five year cohort study employing a survey design.

Methods: 14,281 pupils have participated in the survey study in the past 5 years. A questionnaire was designed to measure the prevalence of bullying based on that of Olweus (1991) and Whitney and Smith (1993). The questionnaire also including items on pupils experiences of break times and number of friendships. Of interest to this study was the question 'Have you ever received any nasty or threatening text messages or e-mails?' which was answered on a six-point Likert scale ranging from *I haven't received any* to *All the time.*

Results: The results of the survey have seen a dramatic increase in cyberbullying over the past 5 years; rising from 14.5 per cent in 2002 to 20.6 per cent in 2006, the increase in cyberbullying was reported consistently every year in girls however the pattern among boys was more inconsistent, with the data showing both increases and decreases over the five year period. Correlates of being a victim of cyberbullying were also examined and analysis showed that victims of cyberbullying were more likely to report feeling lonely in school and also reported having fewer friends.

Conclusions: Suggestions as to how cyberbullying can be tackled in line with current anti-bullying strategies are suggested as well as future directions for research are discussed.

E09

Text messaging as a form of bullying.

Nathalie Noret, *York St. John University* **& Ian Rivers,** *Queen Margaret's University College Edinburgh.*

Objectives: Research has identified that the mobile phone has transformed the social lives of young people. As Bryant *et al.* (2006) argue, technologies such as text messaging and instant messaging are redefining the nature of young people's social networks and social interactions. Cyberbullying, however, is a relatively new phenomenon and as such has received little research attention, particularly in the UK, and research that has been conducted has tended to focus on the prevalence of cyberbullying and its correlates. The aim of this study is to examine the content of text messages received by victims of cyberbullying.

Design: This study draws upon the results of one aspect of a much larger five year cohort study employing a survey design, focusing in particular on the data collected in 2006 when participants were asked to provide examples of text messages they had received.

Methods: A questionnaire was designed to measure the prevalence of bullying based on that of Olweus (1991) and Whitney and Smith (1993). The questionnaire also including items on pupils experiences of break times and number of friendships. Of interest to this study was the question 'Have you ever received any nasty or threatening text messages or e-mails?', which was answered on a six-point Likert scale ranging from *I haven't received any* to *All the time* and examples of text messages participants reported receiving.

Results: 3054 pupils participated in the survey in 2006 with 15.64 per cent reporting being a victim of cyberbullying. Overall 177 participants gave examples of the text messages they had received. The majority of these messages involved the threatening of physical violence, for example 'you're being knocked out after school', other types of messages included verbal abuse and name calling.

Conclusions: Results are discussed in terms of raising awareness of cyberbullying and suggestions on how cyberbullying can be tackled are suggested.

E10

Teachers' job satisfaction in the UK: 1962–2007.

Colin Anderson, *Independent Researcher* **& Robert Klassen,** *University of Alberta.*

Objectives: In 1962 W.G.A. Rudd and S. Wiseman published a paper in *BJEP* exploring teachers' job satisfaction and dissatisfaction. Our mixed methods study posed the following questions: Has the level of teachers' job satisfaction changed in 45 years? Have the sources of job dissatisfaction changed? What kinds of 'critical incidents' are indicative of teachers' current sense of job satisfaction and job dissatisfaction?

Design: We used questionnaires containing fixed responses, open-ended responses, and critical incident approaches to investigate job satisfaction, and sources and examples of job satisfaction and dissatisfaction. We replicated Rudd and Wiseman's 1962 study by asking teachers, 'How satisfying do you find your job as a teacher?' and by asking teachers to rate 17 items representing sources of job dissatisfaction. In addition, we used open-ended critical incident scenarios to explore current examples of job satisfaction and dissatisfaction.

Methods: Participants were 152 teachers (64 per cent female, M=13.4 years experience) from 11 comprehensive secondary schools in south-west England. Teachers were volunteers who completed a 42-item mixed methods questionnaire containing fixed and open-ended items. We used t-tests to compare levels of satisfaction, and content analysis to analyze the critical incident scenarios.

Results & Conclusions: Teachers in our 2006 sample expressed significantly less job satisfaction than in the 1962 sample ($p < .01$), with a mean score of 3.9 on a five-point scale compared to 4.3 in 1962. None of teachers' top five sources of dissatisfaction in 1962 (e.g., salaries, human relations, and inadequate buildings) appeared in the top five sources from teachers in our study (e.g. lack of time, teaching load, and pupils' behaviour). We conclude by discussing changes in job demands in the last 45 years, and how teachers might be best supported in their work.

E11

Cross-cultural studies on children's attachment behaviour.

I-Lin Fu, *I-Shou University, Taiwan,* **R.O.C.O. Muldoon & N. Sheehy,**
Queen's University Belfast.

In this cross-cultural study of children's attachment behaviour toward the parents and the peers we aim to examine each individual relationship between children's gender, family social status, cultural background and their attachment behaviour toward the parents and peers. And if the above three factors have any joint influences on children's attachment behaviour will also be examined. By doing so, we hope the findings will broaden our understanding of differences/ similarities between the children in different cultures. Total of 228 children (105 Taiwanese, 50 Chinese-Irish, and 75 Northern Irish) were selected for current research. Multi-variable ANOVA was applied for the analysis, and the gender, family social status, culture group were entered as between- object factors to examine the individual differences. Findings revealed that there are no significant differences observed on children's attachment behaviour toward their peers across the culture, gender and family social status factors. However, significant differences were observed on children's attachment behaviour toward their parents. Findings revealed that 'culture' had a main effect on both children's perceived trust (F $[2, 227]=3.07$, $p<.05$) and on their alienation from their parents (F $[2, 227]=4.55$, $p<.05$), where 'culture' and 'gender' interacted to affect children's scores on parental communication scale (F $[4, 227]=5.51$, $p<.01$), and 'gender' and 'family social status' interacted to affect children's attachment behaviour in terms of alienation from their parents (F $[2, 227]=3.70$, $p<.05$). Although the findings from current research suggest that psychosocial variables, such as gender, family social status, and culture background undoubtedly exert a complex interactional influence on these three child-related attributes. But children from the two indigenous groups have more similarities than with the immigrant groups. Thus, this research questions that extent of differences between children from East and West and points to the need for cross-cultural research to be truly cross-cultural. Generalising findings from costensibly similar cultures, be they Eastern or Western is fraught with difficulties and may inhibit rather than promote our understanding of children development.

E12

Gender differences in reading ability and attitudes to reading.

Sarah Logan, *PhD Student.*

Objectives: The aim of this study was to investigate the relationship between reading ability and various social and personality factors relating to achievement in school, and how these factors relate to each other. Gender differences were also examined.

Design: This was a within subjects experiment as all children completed a test of reading ability and a questionnaire. This was so reading ability could be correlated with all areas covered in the questionnaire.

Methods: 232 children (117 male) with an average age of 10 years 7 months (0.35 SD), completed the Group Reading Test (reading comprehension) and a questionnaire covering eight areas; frequency of reading, attitudes to reading, attitudes to school, motivation, self-esteem, peer and teacher support, need for recognition and need for early achievement. These were group administered tests carried out in the children's classroom.

Results: Overall girls had significantly better reading comprehension than boys (ANOVA). Girls also read significantly more frequently, and after co-varying for reading ability, girls had a significantly more positive attitude to reading and school, higher motivation and higher need for recognition, whereas boys had significantly higher self-esteem. Reading ability was significantly correlated with frequency of book reading, attitude to reading, attitude to school, motivation and self-esteem in boys, whereas in girls, reading ability only significantly correlated with frequency of book reading, motivation and self-esteem.

Conclusions: Overall, children who are better readers tend to read more, are more motivated and have higher self-esteem. However, boys' reading ability is more closely associated with their overall attitude towards reading and school than that of girls'.

Teachers' conviction of pedagogical content and mathematical achievement of fourth graders.

Thorsten Roick, *University of Goettingen, Germany,* **Dietmar Gölitz,** *University of Lueneburg, Germany* **& Marcus Hasselhorn,** *University of Goettingen, Germany.*

Objectives: An important aim of mathematical education in primary school is the imparting of mathematical competencies for an effective comprehension of mathematical content. In the German Educational Standards, mathematical competencies are considered to be an interaction between specific cognitive competencies and mathematical content. Research over the last two decades has shown that teachers' conviction of pedagogical content, reflecting a cognitive constructivist orientation, is associated with larger achievement and achievement gains in mathematical word problems in the first primary school years. The present study investigated, whether there is an association between a cognitive constructivist orientation of the teachers and the mathematical achievement in the last primary school year.

Design: A cross-sectional design was used. Mathematical achievement of the students was examined by an objective mathematical achievement test, which was group-administered by trained assistants. Participating teachers completed a questionnaire on their own.

Methods: 761 fourth graders taken from 43 German primary school classes participated in the study. The mathematical achievement of the students was examined by means of the German Mathematical Achievement Test for Fourth Graders (DEMAT 4), a curriculum-orientated achievement test. Participating teachers completed a questionnaire assessing the level of cognitive constructivist orientation in the teachers' conviction of pedagogical content about elementary mathematics.

Results: A multilevel regression-analysis strategy was used for an appropriate differentiation of student and teacher characteristics. The results are in contradiction to the expectancy of an association between concurrent mathematical word problems achievement and teachers' pedagogical content beliefs reflecting cognitive constructivist orientation. Nevertheless, for arithmetical tasks an interaction is found for student gender and the teachers' conviction of pedagogical content.

Conclusions: The role of teachers' conviction of pedagogical content about elementary mathematics for the late primary school years seems to be unsolved. The results of the present investigation are discussed against the background of the empirical restrictions of the study.

Forensic

Extra-legal defendant characteristics and mock juror ethnicity re-examined.

Sandie Taylor & Megan Butcher, *Bath Spa University.*

Objectives: The objective of this study was to consider the influence of physical attractiveness (high/low) and ethnicity (White/Black) of a defendant depicted in a photograph on mock jurors' (White/Black) decisions of verdict, extent of guilt and sentencing.

Design: An unrelated design was adopted where conditions varied according to defendant characteristics and mock juror characteristics: this culminating in eight possible combinations of the three independent variables.

Methods: 96 participants took part, 48 White and 48 Black. All participants were 3rd year undergraduates from four British Universities with a good understanding of English. A fictitious transcript of a 'mugging' with an attached photograph of the defendant and a scoring sheet was provided: 0 to 10-point interval scales for extent of guilt and sentencing and a nominal scale for verdict of guilty/not guilty. Transcript content remained constant but photos varied depending on condition participants were blindly allocated to.

Results: Using MANOVA significant effects for defendant attractiveness on extent of guilt ($F(1,88)=9.369$, $p<0.01$), sentencing ($F(1,88)=7.386$, $p<0.01$) and verdict ($F(1,88)=8.836$, $p<0.01$) and an interaction between defendant attractiveness and race of defendant on sentencing ($F(1,88)=4.439$, $p<0.05$) were uncovered. Ethnicity of the defendant narrowly missed significance for the sentencing variable ($F(1,88)=3.470$, $p>0.05$). Backward Stepwise Multiple Regression Analysis showed the best predictor variables of verdict were extent of guilt (beta=0.324, $p<0.01$) and sentencing (beta=0.538, $p<0.001$) ratings.

Conclusions: Findings confirm previous research on the effects of extra defendant legal characteristics, such as physical attractiveness, on deliberation. Consequently, attractive defendants are rated less harshly than 'homely' defendants (Rector & Bagby, 1993; Stewart, 2001). Support for Ugwuegbu (1978), Foley and Chamblin (1982) and Abwender and Hough's (2001) interactive effects of defendant and mock juror ethnicity was not found in this study.

F02

Family background and environment, psychological adjustment, and juvenile delinquency.

Tony Cassidy, *University of Limerick* **& Melanie Allen,** *Thames Valley University.*

Objectives: The relationship between youth offending and family background is still unclear in the literature and is often confounded by assumptions about a link between mental health and criminality. This study explored the role of family factors and psychological adjustment in relation to delinquency and youth offending to try and explicate the relative importance of family structure, family relations, and psychological adjustment.

Design: This was a quasi-experimental survey design using structured interview and questionnaire data collection techniques.

Methods: The study used the Brief Symptom Inventory, the Family Environment Scale, and the Delinquency Scale in a structured interview format to measure psychological adjustment, family structure and relations, and levels of youth offending, in 219 older children and adolescents aged between 12–17 years living in areas associated with high levels of youth offending in the UK.

Results: Analysis involved correlations, hierarchical multiple regression and analysis of variance. Family relations were the best predictors of delinquency and were also correlated with psychological adjustment. The relationship between delinquency and psychological adjustment were inverse, indicating that participants with poorer psychological adjustment were less likely to be involved in criminal behaviour.

Conclusion: The study supports the conclusion that youth offending and psychological adjustment are both influenced by a range of factors in the family, but psychological adjustment is unlikely to be causally implicated in offending behaviour.

Health

G01

Everyday prospective memory impairments associated with teenager drinking.

Thomas Heffernan, Janice Bartholomew & Terence O'Neill, *Northumbria University,* **Steve Holroyd,** *Newcastle University* **& Jonathon Ling,** *Keele University.*

Objectives: Alcohol is on of the most commonly used substances by teenagers in the UK. Despite this, little research has investigated the possibility of deficits in prospective memory (PM) ability (memory for future intentions) being associated with excessive alcohol use in teenagers. The present study aims to address this by comparing excessive drinkers with low-dose/alcohol-free teenagers aged between 16 to 19 years on self-reported everyday PM. whilst controlling for age, the use of strategies to assist remembering, and other substance use.

Design: A non-experimental design utilising pre-existing groups of excessive alcohol users and low-dose/non-users was employed for the study. Other drug use and strategy use were also measured.

Methods: An opportunity sample of 108 students studying at College/University in the North East of England participated. Forty-five participants were identified as 'excessive alcohol users' (ingesting above 21/14 units of alcohol per week for males/females respectively over a period of one year or more) and 63 were identified as 'low dose/no-alcohol controls' (ingesting below the 21/14 units over one year or more (incorporating nine non-users). Each participant completed the self-report Prospective Memory Questionnaire (PMQ) – which measures everyday memory lapses (e.g. how often one forgets to post a letter, lock one's door, etc.) and a Substance Use Questionnaire – which was used to measure weekly alcohol use and other substance use.

Results: A series of one-way ANOVAs revealed that the excessive alcohol user group was older, smoked more cigarettes and used more cannabis, than the control group, with no difference in strategy use. A MANCOVA revealed that, after controlling for age, cigarette use and cannabis use, the excessive alcohol user group reported significantly more long-term, short-term and internally-cued, PM lapses.

Conclusions: Deficits in everyday PM are associated with excessive drinking in teenagers.

Does smoking in teenagers affect their everyday prospective memory performance?

Terence O'Neill, Thomas Heffernan & Janice Bartholomew, *Northumbria University,* **Steve Holroyd,** *Newcastle University* **& Jonathon Ling,** *Keele University.*

Objectives: This study was designed to assess what impact long-term smoking has upon everyday prospective memory (PM) in teenagers. Heffernan *et al.* (2005) found that older smokers reported a greater number of long-term PM errors than non-smokers on the self-reported Prospective Memory Questionnaire (PMQ). The present study aims to extend this research to focus on a teenage cohort and to extend the research paradigm to include the PMQ and an objective measure of PM.

Design: A non-experimental design utilising pre-existing groups of smokers and non-smokers was employed for the study. Other drug use and strategy use were also recorded for possible use as control variables.

Methods: 38 smokers and 38 non-smokers were tested, all of whom were college/university students studying in the North-East of England. Each participant was asked to complete the PMQ – a self-rating scale used to gauge the number of errors in short-term, long-term, and internally-cued aspects of everyday PM, as well as the number of strategies used to aid memory, and a video-based prospective memory task – during which the person has to remember particular activities at particular locations as they appear on the video. A drug-use questionnaire determined how many cigarettes were smoked per week, as well as other drug use.

Results: A series of one-way ANOVAs revealed that the smokers were older, drank more alcohol and used more cannabis, than the non-smokers, with no difference on strategy use. A MANCOVA revealed that, after controlling for age, alcohol use and cannabis use, the smokers reported more lapses in their long-term PM and recalled less on the video-based PM task, than the non-smokers.

Conclusions: Self-reported and objective deficits in everyday PM are associated with smoking in teenagers.

The effects of advertisements portraying slender women on women's body image: An intervention study.

Beverley Ayers, Sarah Grogan & Mark Forshaw, *Staffordshire University.*

Objectives: To investigate the effects of viewing advertisements containing slim women on an individual's body image.

Design: The study involved a 2 x 2 mixed design. The independent variables were time of testing (before and after viewing advertisements), and condition (viewing images of slender women, or viewing cartoons with no human figures present). Dependent variables were appearance evaluation and appearance orientation.

Methods: The study included 80 female students (40 in each condition) aged between 18 and 39 years. Participants were asked to complete the Multidimensional Body-Self Relations Questionnaire before being randomly assigned to conditions where they viewed television advertisements either containing slender women or cartoons with no human figures. After viewing, body image measures were repeated.

Results: A significant interaction was found for condition and time on appearance orientation, suggesting that participants in the experimental condition wanted to put significantly more effort into their appearance after they had viewed images of slim, attractive models compared with participants in the control condition. There were no significant differences on appearance evaluation.

Conclusions: Individuals who watched advertisements containing slim women showed a significant increase in appearance concerns and investment in their appearance. Results are discussed in relation to potential impact on women's health, including the possibility of individuals engaging in either healthy or unhealthy diet or exercise behaviours.

G04

A neuropsychological approach to stroke rehabilitation.

Paul Holmes, Hilary Chatterton, Kathryn Kinmond, Louise Ewan, Antonita Haire, Mike Smith & Nickolas Smith, *RIHSC, Manchester Metropolitan University.*

Objectives: To assess the efficacy of an observation-based intervention on functional and psychological markers of stroke rehabilitation. Hypothesis: the intervention is associated with neural activity in the brain similar to that occurring during the overt behaviour and that this isomorphism will benefit the individual.

Design: A single-participant casestudy.

Methods: Following COREC approval, a participant was recruited from a stroke support group. Pre-test measures included: The Postural Assessment Scale; The Timed Up and Go; and the Fluidity Index. To assess psychological affect, The Rosenberg Self-Esteem Scale, The Stroke-Specific Quality of Life Scale and The Positive And Negative Affect Scale were used. The participant was interviewed to establish meaningful life events and behaviours. DVDs were developed from the script to reflect the content of the interview. The DVDs adopted different visual perspectives and movement agencies. The viewing experience was controlled to include multiple observation modalities. Visual elements were viewed on a screen for 15 minutes twice per day for three months. Checks were made with the participant to confirm the method and progress of the intervention. Visual elements of each script were reviewed and updated as required. At the end of the intervention period the participant repeated the testing protocol described above.

Results: All measures of motor ability improved during the intervention period. In contrast, the measures of affect remained unchanged. The qualitative data provided strong support for the intervention and highlighted the multisensory experience of observation for the participant.

Conclusions: Observation of meaningful visual stimuli may allow individuals who have had a stroke to re-experience sensory-motor behaviours and support changes in self-confidence and self-esteem to improve quality of life.

An evaluation of mental health day services.

Emma F. France, *Richmond Fellowship.*

Objectives: This study evaluated two voluntary sector mental health day services (drop-ins) in West Sussex for adults with severe, enduring mental health needs to determine whether the services were fully utilised and adhering to best practice guidance.

Design: A multi-method approach was employed combining a qualitative investigation of the experiences and views of mental health service users and referrers between August 2005 and January 2006 and quantitative analysis of attendance data, referral numbers and membership data.

Methods: A purposive sample of 25 day service users and 11 non-day service users aged 36 to 73 from local mental health services was recruited (*N*=36). Focus groups and semi-structured in-depth interviews explored their perceptions of day services, their support needs and reactions to potential new day service models. Six referrers from three local Community Mental Health Teams were interviewed by telephone. Research sessions were recorded and transcribed or detailed notes were taken. Collation and analysis of six months of weekly and daily attendance records, current members' details and 12 months of referral data revealed who used the service, patterns of use, and services' appeal.

Results: Qualitative material was subject to thematic analysis; quantitative data were analysed using descriptive statistics. The two services under evaluation had an ageing, long-term membership, were under-used and were not meeting all the needs of current or potential new members. Existing members valued a safe haven staffed by specialists. Barriers to service use included low referrals due to a weak relationship with referrers, offering similar activities to other local services, inadequate marketing and cumbersome referral procedures. Other issues were: out-dated service aims; inappropriate venues; and an insufficient focus on outcomes.

Conclusions: Recommendations include a new service model that provides a mix of services unique to the area in community settings without losing elements valued by current members.

G06

The effects of interventions for people bereaved by suicide:
A systematic review.

Catriona McDaid, Rebecca Trowman & Su Golder, *University of York,* **Keith Hawton,** *Centre for Suicide Research, Oxford* **& Amanda Sowden,** *University of York.*

Objective: One aim of the National Suicide Prevention Strategy for England is to promote the mental health of those bereaved by suicide. To help meet this aim, the DoH Policy Research Programme commissioned this project to evaluate interventions for people bereaved by suicide. Anecdotal claims and reviews of studies suggest that those bereaved by suicide have been helped. However, the absence of systematic review methods makes it unclear whether such interventions are helpful.

Design: A systematic review was conducted.

Methods: Standard systematic review methods were used. Thirty-seven electronic databases and other resources were searched for papers in all languages. Studies of any type of intervention, in any setting, for people bereaved by suicide were eligible for inclusion, provided they had a control or comparison group. Studies were assessed for risk of bias using standard criteria. A narrative synthesis was undertaken.

Results: Seven eligible studies were identified. All studies had methodological problems. Limitations included the methods used to allocate participants to the intervention and comparison groups, groups not balanced at baseline for potential confounding variables, length of follow-up too short and studies underpowered to detect an effect. There was some limited evidence of effective interventions including a bereavement group intervention for children led by psychologists, a group intervention for adults delivered by a health professional and a volunteer, an active outreach intervention, and a crisis intervention in a school setting. However, this evidence must be considered in the context of the methodological limitations of these studies. For the remaining studies no significant differences or marginal differences were detected between groups. However, these were all small studies.

Conclusions: The evidence identified and appraised is not robust enough to provide clear implications for practice. There is a pressing need for methodologically sound RCTs of interventions aimed at supporting people bereaved by suicide.

G07

Heart rate variability in Type A and Type B individuals when exposed to distracting environments.

Nickolas C Smith, *Research Institute for Health and Social Change, Manchester Metropolitan University.*

Objective: This study examined variations in the major spectral components of heart rate variability (HRV) shown by Type A and Type B individuals when performing an attention demanding task under environmental distraction.

Design: 41, Structured Interview classified participants (19 Type As and 22 Type Bs) performed a modified version of the Stroop Test in three, counterbalanced conditions (i.e. a quiet condition and when exposed to 75dBA and 95 dBA white noise).

Method: Artefact-free, digitised ECG signals (1 kHz) divided into four minute blocks corresponding to pre-task, on-task and post-task periods were analysed. Stationarity of each data series was checked using the normal rejection criteria. The Yule variant of the Levinson-Durbin recursive algorithm was used to determine the autoregression power spectrum from each IBI trendgram. A spectral component with a centre frequency of between 0.08 and 0.15 Hz was considered the LF component of the signal. For each epoch the spectral component with the same cycle as the respiratory component was taken as the HF element. Subsequently the power spectrum was divided into the sum of its spectral components using the Prony spectral decomposition method and the low to high frequency (LF/HF) ratio calculated. Throughout the study, participants breathed spontaneously during each of the analysed epochs with respiration varying in the 0.22 to 0.26 Hz ranges across the testing conditions.

Results: Following ANOVA analysis, the Type A/B by distractor condition interaction was found to be significant. Type As showed greater LF/HF ratios in both the 75 dBA and 95 dBA conditions compared to Type B participants whose LF/HF ratios remained consistent across the distractor manipulation. Also in Type As, LF influences on HRV continued to predominate during the post-task period whereas Type Bs rapidly returned to pre-task levels following disengagement from the task.

Conclusions: Findings suggest that when faced with distracting environments Type A individuals show greater sympathetically mediated influences on HRV which persist into post-task recovery periods.

G08

A systematic research review on suicidal behaviours and medical conditions.

Eleni Karasouli, David Owens & Gary Latchford, *University of Leeds.*

Objectives: This systematic research review investigated the association between medical illness and suicidal behaviour. Specifically, the review examined four medical disorders (stroke, HIV/AIDS, end-stage renal disease, and multiple sclerosis) focusing on the risk of suicidal behaviour. Mediating factors, possible mechanisms and variation across the different medical categories were also examined to generate broader conclusions.

Design: Four systematic research reviews were conducted in order to identify all the recent studies focusing on completed suicide, attempted suicide and self-harm in relation to stroke, HIV/ AIDS, end-stage renal disease and multiple sclerosis. Chronic conditions that impact upon quality of life were the criteria for the disorders. The reviews were followed by a critical analysis of the methodological problems encountered in studying suicidality among people with these four conditions.

Methods: The literature review included studies with a range of different methods (e.g. psychological autopsy, epidemiological, etc.). The main source used to identify relevant articles was computer databases. The reference sections of the articles were also scanned for secondary references and key authors were contacted.

Results: The review revealed that there is increased risk of suicidal behaviour for patients suffering from any of the four medical conditions. The risk is higher especially in younger age groups. The review also found that the suicidal risk seems to decline with time. For some conditions, the duration of hospitalisation is negatively related to suicidal behaviour.

Conclusions: Even though the available research so far suggests suicidal behaviour to be a danger among medically ill people, there is not enough consistent evidence to fully support this notion. Up-to-date evidence in samples that are representative of current patients in the UK is needed. An accurate assessment of the risk of fatal and non-fatal self-harm in people with medical conditions is important, so that appropriate treatments can be offered to patients by medical and mental health specialists.

Mixed MSages: How do people living with multiple sclerosis understand different treatments and therapies?

Shelley Anne Thompson, Anna Madill & Rebecca Lawton, *Institute of Psychological Sciences, University of Leeds.*

Objectives: Multiple Sclerosis (MS) is a degenerative condition of the CNS, often leading to progressive disability. Current conventional practice attempts to modify disease progression in some affected individuals, and provide symptomatic relief in the majority. People with MS may also draw from complementary and alternative medicine (CAMS) to manage their condition. This research explores how such individuals conceptualise and respond to the gamut of potential therapeutic approaches, as little is currently known about the phenomenon.

Design: A qualitative approach to design and analysis was adopted, as it was deemed the most appropriate means of engaging with individual experience. This was based upon principles of Personal Construct Theory (PCT; Kelly, 1955).

Methods: 18 people with MS participated in semi-structured interviews, 15 of whom completed repertory grids. Here, they generated constructs for and subsequently rated particular therapies. The grids were analysed qualitatively, concomitant with generation of key 'themes' underpinning constructs around meanings of treatments and therapies. Interview transcripts were further analysed using Interpretative Phenomenological Analysis (IPA; Smith, 1995), a qualitative methodology compatible with PCT.

Results: Interpretation of results suggests that although people with MS are interested in, and value access to conventional medicine, its limitations are appreciated. CAMS have the potential to enhance feelings of personal control and of general well-being. As MS is essentially incurable, CAMS should not be disregarded in context of having important therapeutic value. Additionally, distinctions between concepts of 'treatment' and 'therapy' were found within narratives, the former relating to more passive engagements with practitioners, the latter having highly personalised meanings and interpretations.

Conclusions: Implications of the findings are outlined, in context of a broader spectrum project. A parallel study involving different practitioners working with MS clients is in progress. This will enable a synthesis of the two studies to be developed with the intention of learning more about mutual constructions and understandings of patients and their practitioners.

G10

A cross-cultural study on stroke-related PTSD, comorbidity and the role of health locus of control.

Xu Wang, *School of Psychology, University of Plymouth,* **Man Cheung Chung,** *School of Applied Psychosocial Studies, University of Plymouth,* **Michael Hyland,** *School of Psychology, University of Plymouth* **& Magid Bakheit,** *Mount Gould Hospital.*

Objectives: This study investigated cultural differences (Chinese versus British) in: (1) the manifestation of post-stroke PTSD and comorbidity; (2) the relationship between coping, post-stroke PTSD and comorbidity.

Design: A prospective study conducted in Britain and China.

Methods: 90 stroke inpatients (M=43, age=75.23) were recruited from Plymouth, U.K. One hundred and two stroke patients (M=64, age=64.28) were recruited from Beijing, China. Approximately 1.5 months post-stroke, they were interviewed with Posttraumatic Stress Diagnostic Scale (PDS), General Health Questionnaire-28 (GHQ-28), Barthel Index (BI) and Multidimensional Health of Locus of Control Scale (MHLC).

Results: Among British patients, 28.9 per cent, 48.9 per cent and 22.2 per cent had full-PTSD, partial-PTSD and no-PTSD respectively. Among Chinese patients, the figures were 16.7 per cent, 47 per cent and 36.3 per cent respectively. Significant differences were found on diagnoses between two groups (cζ=11.952, p<.001), and higher PTSD total score (t=4.12, p<.001). Chinese had more comorbidities: somatization (t=−2.95, p<.001). Controlling for patients' demographic variables, regression analyses showed that chance locus of control predicted PTSD total in both groups, betaUK=0.28, p<.01. No significant associations were found between locus of control and GHQ score among the British sample. Among the Chinese sample, internality predicted GHQ total (beta=−0.32, p<.05), in addition to chance locus of control (beta=0.39, p<.05).

Conclusions: Patients in different cultures can manifest post-stroke PTSD and comorbidity differently. There are also cultural differences in the relationship between coping, PTSD and comorbidity. While internality locus of control was a protective factor against comorbidity among the Chinese patients, coping styles bear no relationship to comorbidity among the British sample.

Post-traumatic stress reactions and comorbidity following anaphylactic shock: The role of coping.

Man Cheung Chung & Aisling M. Walsh, *University of Plymouth.*

Objectives: This study aimed to investigate the extent to which people who have experienced anaphylactic shock experience PTSD symptoms. It also aimed to establish the association between coping styles, comorbidity and post-anaphylactic shock PTSD.

Methods: 94 (M=75, F=19, mean age=44.20, sd=14.84) people were recruited from the Irish Anaphylaxis Campaign. They completed the Posttraumatic Stress Checklist, the General Health Questionnaire-28 and COPE. The results showed that 12.8 per cent and 13.8 per cent suffered from full-PTSD and partial-PTSD respectively. The rest (73.4 per cent) did not have PTSD. PTSD symptoms were significantly correlated with the GHQ sub-scales of somatic problems, anxiety, social dysfunction and depression.

Results: A series of regression analyses showed that the severity of anaphylactic shock was a significant predictor to intrusion (t=2.08, p<0.042, £]=0.25), arousal (t=2.84, p<0.006, £]=0.33) and GHQ-28 total (t=2.40, p<0.019, £]=0.28). Controlling for the severity of the anaphylactic shock, the number of anaphylactic shocks, the duration of suffering from anaphylaxis and previous traumatic life events, emotion-focused coping significantly predicted GHQ-28 total (t=2.18, p<0.03, £]=0.30) but not PTSD symptoms.

Conclusion: The conclusion is that following anaphylactic shock, people could display PTSD symptoms which are more likely associated with the severity of the shock than with intrinsic coping styles. The latter appear to relate to the overall comorbidity of sufferers.

G12

Advising patients on issues of rehabilitation: Perceptions of health professionals caring for burns patients in New Zealand.

Jeanne Reeve, *Health Systems Group, University of Auckland,* **Frances James & Stephen Mills,** *National Burns Centre, Middlemore Hospital.*

Objectives: This study investigated if members of a New Zealand burns care team rated their skills in advising patients about physical issues higher than their skills in advising patients about psychosocial issues. Research in the UK has provided evidence that health professionals working with the rehabilitation of people with disfiguring injury or disease tend to rate their skill in advising patients about physical issues higher than psychosocial issues. The questionnaire that was developed in the UK was used to determine if such differences were apparent in this New Zealand group.

Method: This was a cross-sectional study in which 54 health professionals (members of a burns care team at the National Burns Centre in South Auckland, New Zealand) anonymously completed a self report questionnaire. The questionnaire comprised 19 items divided between psychosocial rehabilitation and physical rehabilitation relevant to burn patients. They were asked to rate their perceived skill in advising patients for each item on a four-point scale where 1=Need more training; 2=Adequate; 3=Good and 4=Very Good.

Results: The results supported the hypothesis that this group of health professionals rated their confidence in their skill to provide advice on aspects of psychosocial rehabilitation lower than that of physical rehabilitation. Furthermore it showed that confidence in giving physical rehabilitation advice increased with experience whilst confidence in giving psychosocial advice remained unchanged as experience increased.

Conclusions: This research provides evidence that for this group there is a difference in confidence between advising patients about physical versus psychosocial rehabilitation issues. A simple training intervention to help health professionals deal more effectively with issues of psychosocial rehabilitation has been demonstrated to be successful in the UK. Given that the findings of this New Zealand study reflect those of the UK study, a case could now be made to follow up with a similar training intervention aimed at bringing about comparable gains in confidence.

G13

Headache and depression: How do patients fare on Pain Management Programmes (PMP)?

P. Hood, S. Tedman, P. Murphy, P. Waring, A. Flynn, L. Waller & R. Durtnell,

Department of Neuropsychology, Walton Centre for Neurology and Neurosurgery, Liverpool.

Introduction: The majority of patients referred to PMPs are those with lower back pain (LBP). In our database of 2500 patients who have been assessed for a place on such a course, 1019 (40.76 per cent) had LBP as their primary pain complaint where as only 70 (2.80 per cent) had headache (HA) as the cause of their referral – a percentage near the population occurrence accodring to recent authors (Lanteri-Minet *et al.*, 2003). We examined how scores on a depression measure (Beck Depression Inventory BDI) our 70 HA referrals changed dependent upon which PMP they attended.

Participants and Method: Of the 49 (70 per cent) HA patients considered suitable, 16 were offered a place on a 16-day course, 14 a 5-day course and four were temporarily referred on for medical investigations. A one-way ANOVA showed no differences between the groups in terms of age (16-day 47.03 (11.01); 5-day 43.50 (14.9) p=.380) or the duration of their pain (16-day 79.65 (66.9) months; 5-day 104.00 (122.6) months p=.407). As part of their initial and end of course assessments all patients completed the BDI and these data were analysed using a paired samples t-test.

Results: The results showed that, overall, levels of depression as measured by the BDI dropped from 23.30 (11.23) at the first assessment to 14.96 (11.87) at the close of the programme (t=3.94 p=.001). However, only the 16-day course demonstrated a statistically significant fall in BDI scores (25.0 (11.36) to 16.50 (13.28) t=3.414 p=.003). For those attending the 5-day course, there was no signficant drop in scores (18.43 (10.03) to 10.57 (5.58) t=1.82 p=.119).

Conclusions: This preliminary result was unexpected and has implications for the management of patients with HA on PMPs. It suggests that the longer course is preferable for these patients who often have high levels of depression and anxiety. It is possible that there may be different patterns of BDI scores which contribute to this outcome and these patterns will requre further analysis.

G14

Anxiety profiles of patients with lower back pain (LBP) and chronic headache (HA) at first assessment for a pain management course.

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Department of Neuropsychology, Walton Centre for Neurology and Neurosurgery, Liverpool.

Introduction: Enhanced levels of anxiety are commonly described in patients with chronic pain and are known to be related to acceptance and coping strategies – central concepts in pain management programmes (PMP) (Asmundson, 1999; McCraken, 1999; Rode, 2006).Given differences in their aetiology, we compared the levels of anxiety in two chronic pain subgroups: those with LBP and those with HA on the basis that differences in their anxiety profiles would be informative in the context of a PMP.

Participants: A database search revealed a total of 860 patients where the primary pain complaint at presentation was LBP and 63 with a primary complaint of HA.

Method: The groups were compared on a number of questionnaires completed at their initial assessment for a place on a multidisciplinary PMP. These included the Roland and Morris Disability questionnaire, a pain Self Efficacy Questionnaire, the Pain Catastrophizing Scale and the Pain Anxiety Symptoms Scale (PASS). Patients were also asked to rate themselves as to their overall health (scale 1–5) and how much their health/pain interfered with their daily life (scale 1–5).

Results: Means scores, standard deviations in paraenthesis and the results of an analysis of variance for each scale will be presented. LBP and HA patients did not differ in their self-rated Health status nor in its Interference in their daily life. However, LBP patients reported more disability and lower self efficacy in relation to their pain than HA patients. The HA patients had significantly raised levels of anxiety (Cognitive Anxiety, Physiological Anxiety and Total Anxiety score) than did the LBP patients.

Conclusions: In this preliminary analysis, only the primary pain complaint was considered. The analysis this far shows that the anxiety profile of patients with HA is a more significant characterisation of their psychological well being than it is for the LBP patients. This suggests that additional attention needs to be paid to anxiety as a distinct component in the pain rehabilitation of patients with HA as their primary pain complaint.

Sleepiness and pain: What do patients on a PMP tell us about the Epworth Sleepiness Scale (ESS)?

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Department of Neuropsychology, Walton Centre for Neurology and Neurosurgery, Liverpool.

Introduction: What does the ESS measure: a general tendency to drowsiness (somnificity) (Johns, 2002) or simply a propensity to sleep in given situations (after lunch, reading a book)? To examine this question from the sleep pathology literature, we asked patients on a (PMP) to complete the ESS and the Beck Depression Inventory (BDI) at their initial assessment and at the end of their course.

Participants and Method: The overwhelming majority of patients (79.5 per cent) indicated they had a sleep problem, typically that of insomnia (difficulty getting to sleep and staying asleep), 2.3 per cent said they had no sleep problem and 4.8 per cent indicated they slept too much.

Results: Mean scores were obtained and relationships analysed using Spearman's correlation. At the beginning of the PMP the mean ESS score as 7.08 (5.3) and at the end 6.44 (4.7). For the BDI the initial score was 24.28 (11.7) and end of programme score 16.27 (13.8). At the beginning of the PMP, there was a strong correlational relationship between daytime drowsiness and self reporte depression (p=.002). At the completion of the course, this correlation was no longer evident (p=NS).

Conclusions: The BDI score dropped approximately eight points over the course of the PMP. The ESS failed to mirror this pattern and was no longer correlated with levels of depression at the end of the course as it had been at the beginning. That the ESS score has not improved together with the BDI suggests that, in the painpopulation at least, the ESS is not measuring a propensity to sleep but a tendency to sleep which is situationally specific. These results support those of Olsen et al. (1998) who suggested that clinical depression does not mean higher ESS scores. We hope to examine these findings in specific pain groups: lower back pain, fibromyalgia and headache for presentation in this poster.

G16

Insomnia: The severity of the sleep problem in patients attending 5 and 16 day pain management courses.

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Introduction: Sleep disturbance is commonly associated with pain and depression (Jindal & Thase, 2004). In their review of the inter-relationship between sleep disturbance and chronic pain Smith and Haythornwaite (2006) also highlighted the wider implications of sleep in general quality of life. Where relief of pain via surgery may resolve sleep disturbance (e.g. Fielden *et al.*, 2003), this may not be the case where pain is chronic and not amenable to surgery. We report initial results from an analysis of self-rated sleep parameters and sleep disturbance severity in patients attending pain management courses of 5- or 16-day duration.

Participants and Method: 840 consecutive patients presenting for assessment were asked if they had a significant sleep problem. Almost without exception patients indicated that they suffered from insomnia. They rate the severity of the sleep problem (1–10) and completed the Beck Depression Inventory (BDI). These questionnaires were repeated at the end of their course.

Results: At the start, the 16-day patients had significantly higher sleep problem severity score of 6.78 (2.4) than the 5-day score (5.38 (2.6) $p<.0005$). This pattern was repeated at the end of the courses (16-day 6.40 (2.7); 5-day 5.20 (2.7) $p<.0005$). Using paired samples analysis only the 16-day group showed any improvement in their severity rating ($t=.288$ $p=.011$). Both at the beginning and end of their courses, there were significant correlations between self-rated sleep problem severity and the BDI (Beginning $r=.288$ $p<.0005$; End $r=3.56$ $p<.0005$). Other sleep variables will be reported in the poster.

Conclusions: Of our 840 consecutive assessments, 66.5 per cent of patients rated the severity of their sleep problem as 6 or higher and, despite improvement on the 16-day course, this percentage was still 61.9 per cent at the end of the courses. The positive correlation between depression and sleep problem severity had increased at the end of their pain rehabilitation. These results, together with other sleep parameters, show the critical link between depression and sleep, and between sleep and pain. They suggest that the treatment of insomnia should have a crucial role in multidisciplinary pain management courses of whatever length.

G17

Litigation and the outcomes from a pain management programme.

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Introduction: It has been suggested (Kay, 1998) that patients with pain symptomology in the process of legal claims for compensation may be unsuitable for acceptance onto a pain management course. It has been claimed that relief of pain may not be 'an essential therapeutic target' for such patients (Blyth, 2003) or that litigation might aggravate their psychological distress (Lee, 1993). In contrast, an early study by Mendelson (1987) found no exaggeration of disability due simply to pending litigation. We investigated the influence of on-going litigation in patients attending a multidisciplinary pain management course on three indicators between their initial assessment and end of course report.

Participants and Method: At their initial assessment for acceptance onto a pain management programme patients completed a series of questionnaires. Included was an item which specifically asked whether they were in litigation involving the source of their present pain complaint. A simple Yes/No response was required and no further details were asked about its stage or likely completion date. Over a five-year period a total of 2327 patients completed the questionnaires and were assigned to a 16- or 5-day course. Of these 241 (10.4 per cent) were in litigation, 1419 (61 per cent) were not, and 667 (28.7 per cent) failed to respond to the question. Three outcome measures were compared: the Roland and Morris Disability Questionnaire (RMQ), the Beck Depression Inventory (BDI)and the length of a timed, unaided walk.

Results: A change of =>4 patients was seen in 30.0 per cent of the Litigation group and 39 2 per cent of the No litigation group. In the BDI the litigation group had a change of =>5 points for 59.9 per cent of the group and 56.1 per cent of the no litigation group. Finally, there was an improvement of mor than 50m in the walk for 35.5 per cent irrespective of litigation group.

Conclusions: Overall, there is little difference in any of the 3 outcome measures and our tentative conclusion (pending further statistical analysis) is that no deferment until the outcome of litigation is necessary. It is possible that the large number of non-responders to the litigation question may be because patients themselves fear it might influence their perceived suitability for a pain management course.

The healthcare and everyday choice making experiences of adults with learning disabilities.

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Objectives: Empowerment is key to quality of life for people with learning disabilities. However, in comparison to the general population, people with learning disabilities have fewer choice opportunities. Although existing research provides some insight into their choice making, the choice experiences of those who under utilize available healthcare remains under-explored.

Design: Qualitative methods (semi-structured interviews and a focus group) were used to explore the choice making experiences of staff and two groups of clients: those who had not attended healthcare appointments for avoidable reasons (Group 1); and those who had attended all appointments or not attended for unavoidable reasons (Group 2).

Methods: 13 clients (five female, average age 39.8 yrs) and their carers were randomly recruited in relation to their access over a six-month period to a hydrotherapy pool where non-attendance was an issue. Seven Group 1 clients were recruited and matched with a Group 2 client on the basis of level of disability, age, and hydrotherapy frequency. Seventeen interviews were conducted: four with clients, 13 with carers. A focus group with four hydrotherapy staff explored perceptions of the healthcare choices available to adults with learning disabilities. All discussions were recorded and transcribed.

Results: Transcripts were content analysed. Little difference was seen between Group 1 and 2 clients' and carers' responses. Clients had opportunities to make everyday choices, but others generally made their healthcare decisions. Carers reported difficulties in involving clients in complex decisions. However, opportunities for developing clients' understanding and choice making abilities were not always fully exploited. Staff acknowledged the key role of carers in supporting choice-making, but queried carers' perceived acquiescence with clients' negative choices.

Conclusions: The right of people with learning disabilities to make choices is being acknowledged and promoted. However, their involvement in healthcare decisions is a source of difficulty for those supporting them.

G19

The addiction Stroop task: Examining the fast and slow effects of smoking related cues across different groups of smoker.

James Cane & Dinkar Sharma, *University of Kent* **& Ian Albery,** *London South Bank University.*

Objectives: Attentional biases to smoking related cues are common in people who have smoked and are thought to influence lapse episodes. Recent evidence suggests that smoking-related stimuli not only affect attention during stimulus presentation (fast effect) but also have an effect beyond their presentation (the slow effect). In two experiments we investigate the nature of fast and slow effects in groups of different smoking status: smokers, smokers attempting to quit, marijuana smokers, and non-smokers. It was hypothesised that whilst fast effects of smoking stimuli would be common across all groups of smoker there may be differences in the slow effects.

Design: Experiment 1 (21 smokers, 21 smokers attempting to quit, 22 non-smokers) completed an addiction Stroop task with stimuli presented in three blocks (smoking, negative emotion, and neutral). Each block contained sequences of seven words with a category specific word (e.g. Smoking, Negative, or Neutral) at position 1 followed by six neutral words. Experiment 2 (17 marijuana smokers, 15 non-marijuana smokers) completed an addiction Stroop task similar to Experiment 1 using two blocks, a marijuana block and a neutral block.

Methods: Each word was individually presented on a computer screen in one of four colours (red, blue, yellow, green), and remained on the screen until a response was made to the printed colour. Responses were made using colour coded response keys.

Results: Analysis of response latencies showed that smokers, smokers attempting to quit, and marijuana smokers showed fast effects to smoking cues. In addition, smokers showed no slow effects whereas smokers attempting to quit showed slow effects on the trial immediately following the smoking cues. Marijuana smokers showed slow effects over two trials following stimulus presentation.

Conclusions: Results suggest different levels of attentional bias to smoking cues in different groups of smoker. Implications for research on attentional bias are discussed.

G20

The role of adverse life events in bipolar disoder.

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Objective: This study investigated whether the adverse (i.e. severe and threatening) life events that are well known as precipitants of depressive episodes are also significantly associated with onset of manic episodes in bipolar disorder.

Design: This is a genetic association study that employed a case-control design.

Method: 500 subjects with bipolar disorder, and 500 controls screened for the absence of any mental disorder, recorded their experience of 12 severe and threatening life events using the Brief Life Events Questionnaire. The cases recorded the events that occurred six months prior to their worst episodes of depression and mania, and the controls reported on the events they had experienced in the six months prior to interview.

Results: The total number of life events was significantly higher for bipolar cases before their worst episodes of both depression and mania compared to controls. Cases also reported significantly higher frequencies of eight individual events out of the 12 prior to their worst episodes of both depression and mania compared to the rates reported by controls. Furthermore, within cases, there was no significant difference in the frequency of 10 out of the 12 events experienced before the worst episode of mania and the worst episode of depression. Only two events: experiencing illness, injury or an assault, and childbirth, occurred significantly more frequently prior depression than mania.

Conclusions: The results suggest adverse life events are associated with episodes of both depression and mania in bipolar disorder.

G21

After the illness: Living with the consequences of encephalitis (an update).

Sally Stapley & Karl Atkin, *Department of Health Sciences, University of York* **& Ava Easton,** *The Encephalitis Society.*

Objectives: After the illness, encephalitis may leave individuals with difficulties such as epilepsy, impaired memory and chronic pain. However there has been little research into the after-effects and social consequences of encephalitis both for individuals and for their families. This three year project is one of the first UK studies to investigate the presence and impact of post-encephalitis sequelae, particularly chronic pain and central pain states. It also aims to improve information and service support for individuals who have had encephalitis and for their families.

Design: The study is a mixed methods project comprising a postal survey (quantitative phase) and interviews with individuals who have had encephalitis, their families and with service providers (qualitative phase). To date, respondents have completed a postal questionnaire which was developed specifically for the study.

Methods: The 'After The Illness' survey included: the short-form BPI (Brief Pain Inventory); a proxy measure of health-related quality of life (the SF-36 – version 2); and a range of question items on post-encephalitis sequelae including chronic pain. The postal survey was sent to all adult members of The Encephalitis Society (*N*=1281); a response rate of 59 per cent was achieved.

Results: A number of post-encephalitis sequelae were reported, often several years after the illness. Frequently endorsed problems included: poor concentration, fatigue, memory problems and personality change. Chronic pain and/or central pain states were also reported. Based on similar SF-36 data, both mean Physical and Mental Component Scores on the SF-36 (version 2) suggested that quality of life after encephalitis may be worse than for individuals after other acquired brain injuries.

Conclusions: Post-encephalitis sequelae may persist after the acute phase of illness. Access to neuropsychological assessment and services for individuals who have had encephalitis is essential.

G22

Prostate cancer: Its meaning for men.

Paul Duggan, *Community Team Learning Disabilities – East, Hull,*
Lesley Glover, *Department of Clinical Psychology, Postgraduate Medical Institute,*
University of Hull **& Sigurd Kraus,** *Department of Urology, Castle Hill Hospital, Hull.*

Objectives: To utilise Leventhal's self-regulatory model as a guiding framework to explore the meaning, cognitive and emotional representations, and internal sense of self of men with prostate cancer. Factors taken into account were: masculinity, sexual and bodily functioning, anxiety, depression, positive and negative affect.

Design: The study used a cross-sectional questionnaire based analysis of a larger group (Group One: the already treated group) and a longitudinal repeated measures analysis with a second group (Group Two: the yet to be treated group).

Methods: The sample consisted of Group One (140 men) and Group Two (16 men). Measures used were, the Illness Representation Questionnaire -Revised (IPQ-R), a Sense of Self (SoS) scale devised by the researcher, the HADS, and the PANAS. The same measures were administered to each group. However, Group Two participants were administered the questionnaires pre- and post-treatment.

Results: Scores for Group One indicated that they were not depressed, there were low levels of anxiety, and the illness representations were found to be at a moderate level. There was a moderate impact on masculinity and bodily functioning, and a greater impact on sexual functioning. For Group Two, scores indicated that over time illness representations appeared moderate and stable. More changes in sense of self were associated with more anxiety (F=25.63, df=1, 113, p<.001) and depression (F=46.92, df=1, 113, p<.001). The only predictors of anxiety at Time Two were age, baseline anxiety and consequences.

Conclusions: A greater impact on the level of sexual functioning and satisfaction with their sex life. Side-effects of the treatment for prostate cancer, appeared to have caused more problems than the actual diagnosis. Prostate cancer was seen by many as a normal part of getting older, only having a moderate affect on them.

G23

Body image concerns in Eritrean women in Eritrea and the UK:
A cross-cultural study.

Samrawit Fekadu, Anna V. Nikèeviæ & Marcantonio M. Spada.

Objectives: This study investigated body image concerns among native African women from Eritrea and Eritrean women living in the UK. Additionally, the relationship between acculturation levels and body image was explored. The study aimed to examine the role of Western socio-cultural influences on the development of body image dissatisfaction in a non-clinical population of Eritrean female university students living in Eritrea and those residing in the UK. Using a formal assessment of acculturation, it also aimed to examine whether greater integration into Western culture is associated with less/or more body image disturbance.

Design: Participants included 50 Eritrean students in Asmara, and 44 students residing in the UK. Each participant in Asmara was presented with a translated (into Tigrinya) version of the questionnaire. Participants completed the Body Dissatisfaction subscale of the Eating Disorders Inventory (EDI), and the Body Silhouette Scale. Eritrean women in the UK also completed the Culture Questionnaire measuring the degree of acculturation to British culture.

Methods: All participants provided information on their age, marital status, current body height and weight. The perceptions of the actual and ideal body size were assessed using the figure rating approach (Furnham & Alibhai, 1983). The difference between the two ratings was taken as the body size discrepancy index. To assess body dissatisfaction, the Body Dissatisfaction Subscale, of the Eating Disorders Inventory (EDI; Garner, Olmsted & Polivy, 1983) was used. The acculturation process of Eritrean women residing in the UK was assessed via a culture questionnaire, adapted from Pumariega (1986).

Results: The results of the ANCOVA indicated that body satisfaction was related to BMI and that after controlling for the effects of BMI on body satisfaction, there were no significant differences in the levels of body dissatisfaction between the two groups. In line with their lower BMI, the participants in Eritrea also perceived their current body size and the ideal body size as significantly lower than those in the UK. However, no differences were noted in terms of the overall level of body discrepancy between the two groups. The length of residence in the UK was strongly associated with the level of acculturation. However, neither length of stay nor the overall level of acculturation was significantly associated with levels of body satisfaction.

Conclusions: The findings suggest that exposure to Western ideals of beauty may not be as central to the development of body image concerns as previously thought, at least not in some ethnic groups.

Neuropsychology

H01

Parkinson's Disease: A general phonological deficit? Evidence from non-word reading and repetition.

Tracey M. Oliver & Trevor A. Harley, *University of Dundee.*

Objectives: We explore how Parkinson's disease (PD) affects metalinguistic abilities – specifically phonological processing. As our previous research has shown that individuals with PD have impaired phonological abilities, we predict that tasks which place heavy demands on phonological processing will be particularly problematic for individuals with PD.

Design: Non-word reading has long been established as a test of phonological skill and this was examined in a preliminary experiment. The repetition of novel stimuli also provides a measure of phonological ability and the 'wordlikeness' of the novel stimuli provides a very good predictor of their repetition accuracy. This idea was explored in a non-word repetition task using materials manipulated to produce highly word-like and low word-like non-words.

Methods: 14 individuals with PD and 14 healthy older adult controls were included in the study. In the first task, participants were asked to read aloud regular and irregular words and non-words. In the second task, participants were asked to repeat high phonotactic probability (highly word-like) non-words and low phonotactic probability (low word-like) non-words. For both tasks, pronunciation errors and response times were recorded.

Results: In the non-word reading task, ANOVA analysis revealed an interaction between experimental group and word type, whereby individuals with PD made more pronunciation errors when reading non-words, compared to controls and their own performance on matched words (e.g. 'sleep'–'sleeb'). In the non-word repetition task, individuals with PD made more pronunciation errors overall and more when repeating low vs. high phonotactic probability non-words than controls.

Conclusions: Taken together, results are consistent with the hypothesis that individuals with PD have impaired phonological ability and have difficulty successfully completing tasks that place demands on phonological processes. We argue that damage to frontal systems leads to a general metalinguistic deficit, including a general phonological deficit.

The relationship of cognitive test performance and depression to everyday functioning in older adults.

Hamish J. McLeod, Emma Webster, Gabrielle Meadley & Steven Roodenrys,
University of Wollongong.

Objectives: The deterioration of memory and executive functioning (EF) is linked to impairments in instrumental activities of daily living (IADLs) in older adults. However, the relationship between basic cognitive test performance and IADLs is likely to be influenced by factors such as the severity of cognitive impairment and personal appraisals of cognitive functioning. The current study sought to examine the relative contribution of basic cognitive test performance, appraisals of memory function, and mood disturbance to reported levels of IADLs. It was predicted that variance in IADL ratings would be best accounted for by a combination of cognitive, neuropsychological and affective variables.

Design: A cross-sectional correlational design was used. Participants were 50 older adults (mean age=79 years, mean NART IQ=110) living independently, in low supported hostel care, or in a dementia-care inpatient unit.

Methods: Aspects of memory and executive functioning were measured with the PAL and IDED subtests from the CANTAB computerised neuropsychological test battery, personal subjective appraisal of memory functioning was assessed with the Memory Assessment Clinics Self Rating Scale, depression was measured with the Geriatric Depression Scale, and IADLs were assessed with the OARS Multidimensional Functional Assessment Questionnaire.

Results: 51 per cent of the variance in IADL scores was predicted by a combination depressive mood disturbance and scores on the memory and executive functioning measures. Contrary to prior research findings, impaired memory was more strongly associated with lower IADL ratings than executive dysfunction. The predicted association between mood disturbance and lower self-rated memory performance was not found. Also, self-appraisal of memory disturbance was unrelated to actual IADL ratings.

Conclusions: The relationship between basic neuropsychological tests of memory and executive functioning and higher level functional abilities was borne out by this study. However, a significant proportion of the variance in functioning is also attributable to depressive mood disturbance.

H03

Do ventral stream lesions impair visual search in far space? A single case study of spatial neglect.

Lina Aimola, Igor Schindler & Annalena Venneri, *The University of Hull.*

Objectives: Case studies of patients with neglect showing differences in performance in line bisection (Halligan, 1990; Vuilleumier, 1999) in peripersonal (near) and extrapersonal (far) space, suggest that these two space domains are coded differently by the brain. The aim of the present study was to evaluate whether a) anatomical distinct areas are involved in the processing of near vs. far space and b) neglect for near/far space can also be found in a visual search task.
Design: A neglect patient (MF) with right ventro-temporal damage performed a visual search task in near and far space. His lesion was located in the ventral stream, neglect therefore was expected to occur more substantially in far space.
Methods: The visual search task required rapid detection of single targets presented in random order either on the left or on the right among 35 distractors. The task was performed both in near (57 cm) and far space (114 cm) conditions. Reaction times and accuracy were recorded.
Results: In near space, MF was equally accurate in detecting targets located in the right and in the left visual field [right/left difference 0 per cent]. In far space, MF detected more targets on the right compared to left side [right/left difference 11 per cent]. Additionally, in the far space condition, he was significantly less accurate in detecting targets presented in the left visual field compared to a group of healthy controls but no such a difference was present for targets in the right hemifield.
Conclusions: MF showed neglect only in far space in a visual search task. These preliminary results support the idea that ventro-temporal areas are particularly involved in the representation of far space. It still remains to be established whether neglect in far space is the expression of a deficit which is task independent and resulting from ventral stream damage.

Forgetting to remember: Awareness of deficits in traumatic brain injury.

Melanie Clune, Alberto Blanco-Campal & Teresa Burke, *University College Dublin, Ireland,* **Simone Carton & Mark Delargy,** *National Rehabilitation Hospital, Ireland* **& Niall Pender & Jack Phillips,** *Beaumont Hospital, Ireland.*

Prospective Memory (PM) is defined as 'the timely and successful performance of intended actions' (Cockburn, 1996). The aim of the study is to investigate the extent to which patients with traumatic brain injury (TBI) are aware of deficits in their prospective memory abilities. To date, studies that have investigated such 'metamemory' have produced contradictory findings. Due to the importance of an awareness of deficits for rehabilitation efforts, it is crucial that clinicians be made aware of such specific metacognitive problems in a TBI population. Our study investigates patients' awareness of their PM deficits using the Comprehensive Assessment of Prospective Memory (CAPM) (Waugh, 1999), and the Prospective and Retrospective Memory Questionnaire (PRMQ) (Crawford et al., 2003). Both measures provide self- and proxy-ratings (significant other) of deficits, which, when compared using univariate statistical analysis, will elucidate the patients' awareness of their PM deficits. Patients are recruited from the National Rehabilitation Hospital, Dun Laoghaire, Co. Dublin, and Beaumont Hospital, Co. Dublin, based on strict inclusion and exclusion criteria. Participants are at least three months post-injury, and all have spent at least some time at home since their injury. Proxy ratings are given by a significant other nominated by the patient. Results are pending full data analysis, but preliminary analysis reveals deficits in the brain injury sample. The study stands to contribute significantly to our knowledge regarding awareness of PM deficits in a TBI population, something that is crucial if rehabilitation efforts are to be successful. Given the potentially disruptive impact of PM deficits on TBI patients' ability to resume their pre-injury lives, further research in the area is recommended.

H05

Self-reference, confabulation, and temporal consciousness.

W.J. McGeown, C. Guerrini, A. Venneri & M.F. Shanks, *Clinical Neuroscience Centre, The University of Hull.*

Objectives: The aims of the present study were to investigate the cognitive profile of a delusional patient with Mild Cognitive Impairment (MCI), and to evaluate the current hypotheses for delusions.

Design: We describe a single case study of a 74-year-old retired businessman with amnestic MCI, who was also subject to bizarre verbal inventions concerning fantastic exploits and magical powers as well as déjà vécu experiences.

Methods: The patient was assessed using a number of standard neuropsychological tests in addition to a series of purpose devised memory tasks.

Results: The neuropsychological profile of the patient showed episodic memory impairment including deficits of recent episodic autobiographical memories. The patient's performance on tests including source memory for words, continuous recognition memory (Schnider & Ptak's paradigm, 1999), memory of stimuli frequency and a test of provoked confabulation was not significantly different from matched controls. We identified discrete impairments however, in an ad hoc test measuring the patient's ability to detect and discriminate the source of a range of material including information derived from personal and public events, invented material and episodes culled from his personal reading. Although having no problems with detecting the source of real personal and public events, the patient attributed two thirds of the invented and personal reading material either to his own experience or to that of close acquaintances.

Conclusions: This evidence suggests that defects in continuous recognition and failure to suppress intrusions are not necessary for the appearance of confabulations. The temporal consciousness model proposed by Dalla Barba *et al.* (1999) is more plausible in this context but does not offer a comprehensive framework in this case. We argue that a pathological release of self reference (autonoesis) together with impaired recent episodic personal memory may drive both spontaneous confabulations and the déjà vécu phenomenon.

Occupational

I01

Married to the military: Relationships between relocation, self-concept and well-being experienced by military spouses.

Tonelise Puckey & Gail Kinman, *University of Bedfordshire.*

Objectives: Little is known about the impact that military life has on the spouses of serving personnel. This study examined relationships between the frequency of relocation of military spouses and self-concept clarity, self-esteem, psychological well-being and life satisfaction. The impact of working outside the home on wellbeing was also examined, and the positive and negative aspects of being a military spouse explored.

Design: A cross-sectional design was utilised, with qualitative data also obtained via open ended questions.

Methods: 45 female spouses of serving British Military personnel currently living in the UK (mean age=33, 80 per cent with at least one child) completed a number of questionnaires.

Results: Respondents reported an average of 9.2 years marriage (SD=5.3) with an average of 4.1 relocations. Frequency of relocation was positively related to psychological distress and negatively related to clarity of self concept, self esteem and life satisfaction. International postings appeared to have a particularly marked impact on self concept and wellbeing. Military spouses who worked outside the home more than 16 hours a week tended to report higher self esteem, a clearer self-concept and higher levels of psychological wellbeing than those who worked fewer hours. In general, military spouses considered military life to be rewarding but challenging, with a considerable degree of self reliance required in order to adjust successfully. The absence of their spouse was considered the worst aspect of military life, but frequent relocation, having to cope alone and restricted job opportunities were also highlighted. The most positive aspects of military life were the chance to travel and experience new cultures, affordable housing and financial security.

Conclusions: The findings of this study suggest that enhanced supportive structures should be developed to help military wives develop and maintain an independent identity. Further research is required to examine the type of support that would be most beneficial.

I02

Capturing users' experiences of interactive mobile technology with the Repertory Grid Technique.

John Waterworth & Daniel Fallman, *Umea University.*

Objectives: The study explored the potential of Kelly's Repertory Grid Technique (RGT) to Human-Computer Interaction (HCI) design, as an integrative approach to understanding user experiences of different kinds of mobile technology. HCI has largely moved 'beyond the desktop' interface and the associated usability tests based on assessment of task performance and cognitive load. But current methods that attempt to capture user experiences focus on emotional aspects in isolation and are qualitative and imprecise.

Design: Three popular products (a personal digital assistant, a digital camera, and a mobile phone) and four prototype mobile devices made up seven elements in the repertory grids elicited from participants. In addition to each participant being able to try out these seven devices for as long as they felt necessary, brief (three to five minutes each) introductions to the various contexts of the prototypes and the projects from which they originate were also provided.

Method: 18 individuals took part in technology-rating sessions following the triading procedure, over a three week period. As each participant was exposed to ten triads, we elicited 180 pairs of personal constructs, or 360 different concepts. Each personal bipolar construct was then used as the scale by which the participant rated all of the seven elements in the study. The ratings were then used to find out how the different elements compared and related to each other and to the constructs, both for individuals and across all participants.

Results: 10 prominent dimensions of technological sense-making were derived. The results gave us a graphic account of how participants construed the seven devices; more precisely, how their experience of each related to that of the others. This allowed us to compare experiences of novel prototypes with those of existing and familiar devices.

Conclusions: RGT has great potential as a technique for getting at users' experiences of prototype interactive technology. It provides a quantitative way of situating the experience of new designs in the context of more familiar ones, thus filling a gap in the way HCI designs are evaluated. We suggest that it is also a promising tool for design, when used as part of an iterative design approach where the aim is to design for certain types of user experience.

I03

Employees' mental toughness is associated with their managerial position and age.

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R. Polman & A. Levy, *Department of Sport and Exercise Sciences, The University of Leeds* **& D. Strycharczyk,** *AQR Consultants Ltd.*

Employees Mental Toughness (MT), as measured using the MTQ48 (Clough, Earle & Sewell, 2002), was compared to their managerial/employment position and age. The MTQ48 assesses total MT and four subcomponents as defined by Clough et al.'s (2002) 4Cs model of mental toughness. This includes Challenge, Commitment, Confidence (Interpersonal and In Abilities) and Control (Emotional and Life). Five-hundred-and-four (248 Male, 366 Female) participants (aged between 20 and 65 years) from UK based organisations were requested to complete the MTQ48 online as part of employee assessment and development centres. One-hundred-and-fifty-seven of the participants worked as senior mangers, 189 as middle managers, 112 as junior managers and 47 in a clerical role. ANOVAs revealed significant effects of managerial position with: Total MT (F=7.86; $p<0.001$), Challenge (F=6.13; $p<0.001$), Commitment (F=5.26; $p=0.002$), Control life (F=11.59; $p<0.001$), Confidence in Ability (F=5.81; $p<0.001$), and Interpersonal Confidence (F=9.87; $p<0.001$). But not Emotional Control (F=0.32; $p=0.81$). With each significant effect, MT levels increased with managerial position. The significant MANOVA for age (?=0.86; $p=0.01$) demonstrated that older participants generally reported higher levels of Total MT, Commitment, Emotional Control and Life Control, but not levels of Confidence. The data suggests that higher managerial positions and increasing age are associated with higher levels in reported MT and various subcomponents. This implies that MT has a state tendency suggesting it has the potential to be trained, and develop with age and managerial responsibilities. As such, MT may well be a selective characteristic for management. As a secondary purpose, the present data provides criterion validity for the MTQ48, but future research needs to assess objective work performance data.

I04

The influence of family roles on job strain levels.

Roxane L. Gervais, *Health and Safety Laboratory, Goole* **&**
G.R.J. Hockey, *University of Sheffield.*

Objectives: The present study examined the impact that the family demographic variables of parenthood and marital status may have on job strain.

Design: A cross-sectional study used a self-report questionnaire to generate information on work characteristics and demographic variables.

Methods: Participants (*N*=416) were recruited from amongst the nursing staff of a UK National Health Service (NHS) Trust. They completed a questionnaire to assess job strain, social support, emotional demands, physical demands, parenthood (existence of children or not) and marital status. The nurses were ensured of the confidentiality and anonymity of their responses. The researchers dummy coded the variable of parenthood before its use in the analysis.

Results: A regression analysis tested the effects of social support, emotional demands, physical demands, parenthood and marital status on job strain. The overall model was significant (DR2=.14, $p<.001$), with social support (b=−.35, $p<.001$) and marital status (b=.09, $p<.05$) influencing job strain. Married individual experienced less job strain with divorced or widowed individuals experiencing more job strain. Emotional demands, physical demands and parenthood did not impact on job strain.

Conclusions: The present study showed that social support assisted in reducing job strain. These results substantiate previous research. However, while parenthood was not a determining factor in increasing job strain, marital status was an influencing element. Marital status has been found to have differing effects on job strain (see Spector, Cooper & Aguilar-Vafaie, 2002). Further, some research has highlighted that individuals with a greater number of children had lower job stress levels (Kirkcaldy, Brown & Cooper, 1998; Mott et al., 2004). The findings from the present research illustrate that demographic variables can have differing effects on job strain. Further research is needed to explore their impact on work characteristics.

Does the presence of resources (control and social support) always reduce job strain? A two-wave assessment of their effect.

Roxane L. Gervais, *Health and Safety Laboratory, Goole* **&**
G.R.J. Hockey, *University of Sheffield.*

Objectives: The present study evaluated the moderating effects of resources (control and social support) and uplifts on strain and performance.

Design: A two-wave panel design study used a diary methodology, with data collected nine months apart, for one month each time.

Methods: A sample of nurses (Time 1: N=71, Time 2: N=44), ensured of the confidentiality of their responses, was administered four weekly diaries at the beginning of each wave. Twice daily entries allowed scales to be completed assessing strain, performance, demands, hassles, resources, and uplifts. The researchers controlled the previous day's strain (tiredness, tenseness) in the analyses. The data were aggregated to the individual level.

Results: Hierarchical regression analyses tested the main and interactive effects of demands/resources, demands/uplifts, hassles/resources, and hassles/uplifts. At Time 1 the main effects but not the interaction effects were significant for strain, indicating that demands/hassles and resources/uplifts influenced strain but resources/uplifts did not moderate the effects of demands/hassles. For performance significance was not achieved on demands/hassles or on the interactions. At Time 2 the interaction effects were significant for strain (DR2=.13, p<.05). For performance the main but not the interaction effects were significant. The interaction effects from Time 2 for strain were plotted and of these, two were in the expected direction (hassles/resources, hassles/uplifts) and the other two produced counterintuitive results (demands/resources, demands/uplifts). These counterintuitive results showed that more resources/uplifts tended to increase strain while less resources/uplifts tended to decrease strain.

Conclusions: The counterintuitive results highlighted that the presence of resources, such as control and social support may not always be a positive influence in assisting employees to reduce stress at the workplace. Further research is needed to explore these findings.

I06

Your destiny in their hands – job loss and success in MPs.

Ashley Weinberg, *University of Salford.*

Objectives: This study set out to assess the psychological impact of surviving, losing or leaving the job of MP in the UK House of Commons following a General Election. The variable impact of the role of national politician on the well-being and functioning of its job-holders is recognised, although no previous research has focused on the well-being of ex-MPs.

Design: Questionnaires were sent to a longitudinal cohort of 132 MPs six months after a General Election and approximately two years after the completion of previous test measures. The sample included both winners and losers of the election thus permitting cross-sectional as well as longitudinal comparisons of well-being.

Methods: Measures of psychological health (GHQ-12 and OSI physical symptoms checklist), decision making ability and potential sources of pressure were circulated six months after the 2005 General Election. The cohort included 19 out of a total of 84 individuals who had indicated their planned intention to stand down from the job at the General Election, another 12 out of 52 who lost their seats and a further 101 out of 513 MPs who retained their seats. 60 (45.5 per cent) members of the cohort responded to this latest battery of measures, including 14/31 (45.2 per cent) ex-MPs and 48/101 (47.5 per cent) MPs.

Results: Small decreases in levels of physical symptoms of stress were reported by ex-MPs (compared with two years before), although both psychological and physical symptom levels were higher than those of 'surviving' MPs. Increased psychological symptoms of stress were reported by those losing their jobs compared to those who had already taken the decision to leave Parliament.

Conclusions: A small beneficial impact on well-being was noted for those who had control over their decision to stand down from the job of MP, which retains its ability to engender raised stress levels through high working hours. The merits of preparing MPs for life after Parliament are highlighted.

I07

How do individuals, who have autonomously changed profession, construe the change experience?

William Trebinski, *DOP.*

Objective: Mid-life career changes are frequently motivated by dissatisfaction and a desire for greater work life balance (e.g. Teixera & Gomes, 2000). However, where occupationally successful individuals choose to make the significant investment necessary to establish themselves in new professions, other factors may be more salient. Little is known about the meanings that such individuals attribute to these changes and in this context the following study was undertaken. The central research question guiding this investigation was 'How do individuals, who have autonomously changed profession, construe the change experience'.
Design: The approach was phenomenological, in that the researcher was interested in the participants' personal perceptions, rather than some 'objective' reality.
Methods: 10 individuals, who voluntarily decided to change profession, participated in the study. Semi-structured interviews were conducted by the author, between April and June 2005. Interviews were transcribed verbatim and the resulting transcripts formed the raw data for analysis using the method of interpretative phenomenological analysis (IPA) Smith (1999).
Results: Participants' narratives suggest that they were motivated, more by a positive desire for self-fulfilment, than fleeing from negative feelings of dissatisfaction. For this occupational group, career change was overwhelmingly experienced as an opportunity for personal development and self-actualisation.
Conclusions: The advent of new technology and accelerating socio-economic change means that it will be increasingly common for individuals to change professions during their working lives. However, rather than viewing these changes as problematic and associated with crisis and loss of personal capacity, they may instead be perceived as opportunities for personal growth and development. This has implications for (psychology) professionals working in the fields of individual and organisational change.

I08

Work and well-being? The prevalence of mental ill-health in UK teachers.

Jane Aisbitt, *The University of Hull.*

Objectives: As part of a questionnaire study investigating job strain in UK schoolteachers, mental health was assessed using the GHQ-12 (Goldberg & Williams, 1988). In this high stress occupation, levels of mental ill-health (or psychological distress) were explored, and positive relationships with job demands, general strain and minor health complaints, and negative associations with control, social support and job satisfaction, were predicted.

Design: Data were collected in two waves from secondary schoolteachers (N=447 and N=267, respectively), and, at time 2, from primary schoolteachers (N=151). Wave 1 data were collected from 24 secondary schools in nine local authorities and Wave 2 data were collected from the same schools. Across waves, 117 secondary school respondents were identifiable. The comparison primary group comprised teachers from a single local authority.

Methods: The GHQ ('caseness') method was used: the presence or absence of symptoms (scored 0 or 1) were summed, with scores of three or more deemed suggestive of clinical symptoms of mental ill-health.

Results: 64 per cent of respondents in Wave 1, 53 per cent in Wave 2, and 61.5 per cent of primary teachers reported 'caseness' levels of mental ill-health. Of those secondary schoolteachers who could be identified over the two rounds of data collection 'caseness' levels were similar in Wave 1 and Wave 2 (56.3 per cent and 51.4 per cent respectively). These proportions are considerably higher than those reported in benchmarking data for similar occupational groups (Mullarkey *et al.*, 1999). Relationships with other variables were in the predicted directions.

Conclusions: This research supports other findings of high levels of occupational stress in teachers. Differences between educational sectors and comparisons with Kinman and Jones's (2003) findings among UK academics, specifically with regard to psychological distress, are made.

Police staff careers – what makes them unique?

Catherine Steele & Jan Francis-Smythe, *University of Worcester.*

Currently there are approximately 66,000 Police staff working in the UK. This work focuses on Police staff career development.

Objectives: In light of the above the objectives of this work are to: establish what career development opportunities are available for Police staff; elicit the views of key stakeholders about Police staff careers; and investigate Police staff career anchor.

Design: This work uses a mixed method design. A qualitative approach was used to investigate current provisions. A quantitative approach was used in the analysis of career anchors.

Method: To examine current practices, telephone interviews were conducted with career development officers from seven forces; semi -structured interviews were conducted with 11 Department Managers and employees were asked to complete an anonymous online survey. To examine career anchors 606 employees from various organisations completed a 40-item questionnaire.

Results: Interviews showed that Police staff career development was something that all of the stakeholders were trying to address. Survey data showed that the majority would like to have a long-term career with the police, however when asked if the service could provide for their long-term career needs the majority were unsure. Looking at Police staff career anchors showed that they do differ from other groups of staff. In particular Police staff place higher value of Security and Sense of Service than other groups.

Conclusions: Mawby (1998) noted that the Police service may be left with those, who do not seek greater recognition, promotion and increased responsibility. The finding from this research could be used to design bespoke career development initiatives. To attract and retain quality Police staff the service need to take steps to introduce a clearer career structure to enable staff to see that they have a future in the organisation.

I10

Mental toughness as a moderator of workload evaluation and fatigue.

Keith Earle & Peter Clough, *The University of Hull.*

Central to the concept of mental toughness is the proposition that mentally tough individuals are less adversely affected by stressors. However, this proposition remains untested and there are currently no experimental investigations on the differential impact of stressors on individuals who are high and low in mental toughness.

Objective: To investigate the moderating effect of mental toughness on the subjective responses to different levels of physical workload.

Design: A 3 (Workload) x 2 (Mental Toughness) mixed experimental design was used: Physical Workload was determined by three levels of resistance of a stationary cycle, and Mental Toughness was assessed via a multidimensional psychometric scale.

Methods: 24 students (age 18–36) undertook an assessment of cardio-respiratory fitness (VO2 max). VO2 max scores then determined individual levels of workload corresponding to 30 per cent, 50 per cent and 70 per cent of VO2 max. Experimental sessions lasted 45 minutes, which included 30 minutes stationary cycling and the completion of state fatigue and workload measures.

Results: While analysis of variance failed to find a significant effect of mental toughness on subjective evaluations of mental and physical workload, there was a strong trend for less mentally tough participants to report higher ratings of workload under high physical load. However, analysis of variance did reveal significant interactions ($p < 0.05$) of mental toughness and workload for ratings of fatigue: For the low mental toughness group, ratings of mental and physical fatigue increased with increasing levels of workload. However, there were no increases in either mental or physical fatigue following any of the levels of workload.

Conclusions: The results provide some support for the proposition that mental toughness does have a moderating effect on the subjective experience of fatigue following heavy demands and may also influence the perception of actual workload. These findings have implications for both occupational and sporting domains.

I11

An exploratory study into the effects on older employees of the mandatory retirement of a colleague.

Laura Dean, *Birkbeck, University of London.*

Objectives: This study investigated the impact that a colleague's forcible retirement has on employees' motivation. It was predicted that motivation levels would decline following forcible retirement, in common with research on redundancy and predicted by trust and motivation research.

Methods: 22 participants from a range of occupational backgrounds including took part in hour-long semi-structured interviews. Twenty transcripts were analysed. Participants included colleagues of employees about to be forcibly retired; employees who were about to retire and colleagues of recently retired employees (recently defined as within the last six months). Interview transcripts were analysed and coded initially into 28 separate themes using thematic analysis. These themes were then condensed into the four main themes reported here.

Results: Four main themes emerged indicating differential responses to colleagues' forcible retirement. These themes were: active planning/using the colleague's retirement as a catalyst for personal change; effects on motivation; loss of knowledge and; catalyst for organisational change. These themes were then considered with reference to career planning theory, motivation theory, succession planning and knowledge management processes.

Conclusions: This research identifies some practical considerations for managers and human resources professionals regarding the appropriateness of forcible retirement and the support and interventions necessary for colleagues should employees be forcibly retired.

Social

J01

Identification and its determinants: The case of adult immigrants in France.

Hisham Abu-Rayya, *Unit of Psychology, Åbo Akademi University, Vaasa, Finland & Wolfson College, Cambridge University.*

Objectives: The present study pursued three aims. First, it sought to determine the distribution of types of identification among adult immigrants in France; second, it investigated certain socio-demographic and immigrants-French context experiential and communicational determinants that might contribute to the emergence of exclusively French or ethnic identifications; and third, it attempted to assess the outcomes of French or ethnic identification strategies for well-being.

Design and Methods: Participants of the study were 6211 adult immigrants in France, aged between 45 and 70 years (Mean age=55.80, SD=7.21) with 53.60 per cent being males and 46.40 per cent females. Participants responded to survey questionnaires.

Results: In correspondence with study aims, chi-square tests, a hierarchical binary logistic analysis, and t-tests were carried out, respectively. Findings revealed that participants' dominant identification style of belonging was either French (N=2758, 44.40 per cent) or home country/ethnic group affiliation (N=1899, 30.60 per cent), with a greater tendency towards the former. In relation to the study second question, it was found that immigrants' involvement with their initial national/ethnic environment was positively correlated with identification with their national/ethnic origin, and negatively correlated with their French identification. Involvement with French society was positively associated with participants stating a French identification. Additionally, feelings of being settled in France and a command of French were associated with a significant decrease in the likelihood of home country/ethnic group identification as against French and vice versa. While respondents' personal experiences of discrimination in home country/ethnic group before migration to France predicted a lower likelihood of home country/ethnic group identification compared to French and vice versa, immigrants' reports of being discriminated against in France had no significant effect on identification choices. Lower levels of education, higher degrees of religiosity, and shorter lengths of residence in France were positively connected with home country/ethnic group identification, as against French and vice versa. Findings revealed also that those identifying with their home country/ethnic group recorded relatively higher degrees of loneliness only than those asserting a French identification.

Conclusions: (1) the emergence of other identification styles than assimilation in more than half the cases suggests that such identity resolutions are likely to crystallise even in contexts where assimilation is actively promoted; (2) a three-factor model has emerged to explain such variety on top of socio-demographic variables; and (3) congruence between host societies' acculturation policies and minority individuals' acculturation styles is important for immigrants' well-being.

J02

The reproduction of the refugee and asylum-seeker identity within politically satirical cartoons.

Gail Moloney, *Southern Cross University.*

Social identity theory (Tajfel, 1981) posits that an individual's social identity is defined through their membership to social groups; emphasizing the processes involved in this categorization whilst Social Representations theory (Moscovici, 1984), as a theory of social knowledge, predominantly focuses on the construction of societal understandings about the issue. This paper draws from Duveen (2001) to argue that social identity is resourced from social knowledge, and thus the content of identity must be considered concomitantly with process. Research investigating the recent resettlement of refugees and asylum-seekers into regional towns in Australia contextualizes this argument; explicitly addressing the construction and reproduction of identity within the politically satirical cartoon. The research had three stages: a semantic analysis of the social representation of refugees and asylum-seekers held by 115 participants; a visual analysis of editorial cartoons (Van-Leuwan, 2000, 2001); and an evaluation of those cartoons by 115 participants (Voci & Hewstone, 2003; Wright, 1997). The results clearly demonstrate an interdependence between the viewer's social knowledge about these groups and their interpretation of the cartoon, but revealed a dichotomy between the intent of the cartoon (Manning & Phiddian, 2004) and evaluation of the caricature portraying refugees and asylum-seekers. The implications for understanding the reproduction of identity within social knowledge are presented.

J03

More than a social identity? The representation of national categories in soldiers' and civilians' interview talk concerning military service.

Stephen Gibson, *York St. John University* **& Susan Condor,** *Lancaster University.*

Objectives: The study aimed to assess the adequacy of Social Identity conceptions of national categories for explaining representations of the relationship between military service and 'country' or 'nation'. Specifically, we aimed to explore the possibility that groups with different levels of direct involvement in the military might draw upon different sets of discursive/ideological resources in characterising military service.

Design: A qualitative research design was employed in order to collect representations of military service and national categories in participants' own words. In order to allow for a comparison between groups with different relationships with the military, representations were collected from two groups of participants – soldiers in the British army and civilians aged 18 to 26.

Methods: 23 soldiers and 41 civilians took part in semi-structured interviews. The interviews covered issues related to military service and national identity, including substantive topics such as the war in Iraq and the possibility of a European army. Interviews were transcribed and fully anonymised prior to analysis.

Results: Analysis was informed by social psychological Discourse Analysis, and supplemented by techniques from Grounded Theory and Membership Categorization Analysis. Results indicated that in some contexts both groups of participants constructed national categories in terms of state institutions. The civilian participants frequently treated 'serving the country' in terms of 'serving the government'. Soldiers drew upon themes related to monarchy in representing military service, embodied in the fixed expression 'Queen and country'. This enabled soldiers to manage any threat to moral identity associated with military service by representing military service as undertaken for an essentially apolitical institution.

Conclusions: The Social Identity model is unable to account fully for the participants' representations of national categories in this context. The ideological and rhetorical functions of representations of national categories in institutional terms are discussed.

J04

Parents' intention to talk to their children about HIV/AIDS: An analysis using the Theory of Planned Behaviour.

Gillian Finchilescu, *University of the Witwatersrand, South Africa* **&**
Lucena Muianga, *Eduardo Mondale University, Moçambique.*

Objective: In response to the high prevalence of HIV/AIDS in South Africa (approximately 10.8 per cent of the population infected), a number of social awareness campaigns have been instigated in the attempt to change social practices and risky sexual behaviour. One of the messages in the campaign is to prompt parents to talk to their children about sex and HIV. This paper sought to investigate the factors that affect parents' intention to talk to their children about HIV/AIDS, using the Theory of Planned Behaviour (TPB) (Ajzen, 1991). This theory argues that intention to perform a behaviour is determined by individuals' attitudes to the behaviour, perceptions of norms and their capacity to effect the behaviour. In addition, this study considered the role of stigma associated with HIV/AIDS.

Design: A typical TPB questionnaire (Ajzen, 2002) was designed measuring respondents' attitudes, perception of norms and their own capacity to talk to their children about HIV/AIDS. A scale measuring stigma was also developed. The questionnaire was provided in three languages – English, Xhosa and Afrikaans.

Method: A convenience sample of 102 parents completed the questionnaire under conditions of complete anonymity. Only 92 of the 102 returned questionnaires were usable.

Results: Correlation and multiple regression analyses indicated that (i) the perception of stigma towards people living with HIV/AIDS was strongly associated with intentions to talk to their children – the more negatively HIV/AIDS suffers were perceived, the lower the intention to talk to their children; and (ii) of the TPB factors, respondents' attitudes about talking to children about HIV/AIDS were most important in predicting their intention to do this, followed by perceived efficacy. Perceived norms did not emerge as an important influence.

Conclusion: The research highlights the role that stigma around HIV/AIDS has in confounding efforts to combat the disease.

J05

Financial phobia and its relationship to attachment anxiety.

Eileen Latchford & Antigonos Sochos, *University of Bedfordshire.*

Objective: The aim of this study was to explore the nature of 'financial phobia', a constellation of dysfunctional responses towards everyday finance-related tasks, and locate it within an interpersonal framework – more specifically, attachment research.

Design: A cross-sectional design was adopted, assessing financial phobia, quality of attachment in adult relationships, symptoms of probable dyslexia, general anxiety, and financial stress in a student sample.

Method: A sample of 80 undergraduates (37 men, 42 women, one unknown) were recruited in the University of Bedfordshire (mean age=23.95, sd=2.23). The following questionnaires were used: the Financial Aversion Scale (Burchell, 2003), the Adult Attachment Scale (Collins & Read, 1990), the Revised Dyslexia Checklist (Vinegrad, 1994), the Beck Anxiety Inventory (Beck, Epstein, Brown & Steer, 1988), and the Financial Stress Questionnaire developed by the authors to assess variables such as personal debt or history of financial disasters.

Results: According to the findings, financial phobia was unrelated to signs of probable dyslexia, level of personal debt, income, or socio-economic status. However, it was related to an anxious attachment style, total attachment insecurity, general anxiety, and finance–related traumatic experiences suffered either directly by the self or by people in the immediate interpersonal environment. Pearson *r*s ranged from 0.44 to 0.28.

Conclusions: Financial phobia may be understood within an attachment framework as an inability of anxiously attached individuals to master their economic environments. These individuals seem to consume their inner resources in efforts to control an unsafe and unpredictable perceived secure base, rather than in developing autonomous survival enhancing strategies.

J06

Place attachment formation and its effects on co-operative behaviour in residences.

Hiroyuki Hikichi & Toshiaki Aoki, *Department of Civil Engineering, Tohoku Institute of Technology.*

Objectives: This study aimed to focus on physical and social environments in residences and identify the formation of place attachment among residents. We examined hypotheses based on past social identity studies. First, we predicted that high evaluations of social and physical environments by residents would be associated with a more positive identity with regard to the residence, since individuals identify with groups that provide a positive identity. Next, the evaluation of the social environment would have a greater influence than that of the physical environment since in recent years, because Japanese people have developed the desire to live in a better social environment. We also hypothesised that positive identity with regard to a residence would influence attachment to the residence. Further, the high attachment residents would facilitate co-operative behaviour such that they obtain a more positive identity from the residence.

Design: We asked the respondents to evaluate the social and physical environments in their residence as well as their identity, attachment, and co-operative attitude with regard to the residence. We defined the range of a residence as place in which the respondents carry out activities in their daily lives.

Methods: Our research involved the use of questionnaires, whose items were rated on a six-point scale. The mail survey method was used.

Results: Structural equation modeling (SEM) revealed that the evaluation of the social environment has a greater influence than that of the physical environment in enhancing identity with regard to a residence. In addition, identity with regard to a residence resulted in the formation of attachment. Further, attachment to a residence enhances co-operative attitude formation.

Conclusions: Administrative authorities should improve communication opportunities among residents. Further, for the formation of attachment to a residence, it is necessary that the residents live in a better social environment.

J07

The 'effortful' citizen: Commonsense theories of un/employment and the discursive psychology of citizenship.

Stephen Gibson, Nathalie Noret, Mike Calvert & Helen Macrae,
York St. John University.

Objectives: The study aimed to explore the ways in which a sample of 14- to 16-year-old children discursively constructed and attributed citizenship rights and responsibilities in relation to employment and unemployment.

Design: A qualitative research design was adopted in order to collect accounts of citizenship rights and responsibilities in participants' own words. In order to ensure sample diversity on relevant dimensions, data was collected from pupils at private and state schools.

Methods: A total of fifty eight children took part in twenty four semi-structured interviews. The participants were interviewed in groups of two, three or four. All the participants were 14 to 16 years of age. The interviews were conducted in participants' schools, and covered a range of topics relevant to citizenship and employment. Interviews were transcribed and fully anonymised prior to analysis.

Results: Analysis was informed by Discursive Psychology. Results suggested that in explicit discussions of un/employment rights and responsibilities, participants frequently treated unemployment as primarily the responsibility of the individual. Two relevant features of participants' accounts are identified: First, interviewees frequently drew upon an interpretative repertoire of 'making an effort', which allowed for the argument that unemployment benefits should be made contingent upon individuals' willingness to work. Second, several participants mobilised a contrast between a category of people who did not work because they were physically incapable of doing so, and a category of people who did not work because they were 'lazy' or displayed a lack of 'effort'.

Conclusion: Participants drew primarily upon individual-level explanations for unemployment. Findings are discussed in relation to welfare reform and citizenship education, and to the utility of Discursive Psychology in examining social actors' conceptions of citizenship.

J08

Effects of collective and individual low self-control and group identification on collective problem behaviours.

Ken-ichi Ohbuchi, *Tohoku University.*

Objectives: We examined the effects of collective and individual low self-control and group identification on collective problem behaviours. Based on the assumptions of low self-control and social identity theory, we predicted that the more frequently adolescents engage in collective problem behaviours, the lower self-control their groups display (Hypothesis 1), the lower self-control the adolescents display (Hypothesis 2), and the more strongly they commit to the low self-control groups (Hypothesis 3).

Design and Methods: We asked 119 male participants to recall when they were in high school and then rated them on the following scales: collective and individual low self-control, group commitment, and frequencies of collective problem behaviours.

Results: First, we conducted a principal factor analysis (promax rotation) on the collective low self-control and group identification scales. The factor analysis of collective low self-control revealed two factors, namely narrow perspective (impulsivity, risk-seeking, simple task orientation, and physical activity) and selfishness (self-centeredness and anger). However, group identification appeared to have a single factor. Second, to test our hypotheses, we conducted a hierarchical regression analysis on collective problem behaviour. The results indicated that adolescents belonging to the narrow perspective group and having narrow perspectives were likely to enhance their collective problem behaviours. Moreover, adolescents who strongly identified with the narrow perspective group were likely to engage in collective problem behaviours. However, collective and individual selfishness did not relate to collective problem behaviours. Further, those who strongly committed to the groups engaged more frequently in collective problem behaviours than those who did not.

Conclusions: These results suggest that while low self-control promoted collective problem behaviours in some cases, in the others it did not. Since we used recall methods, examining these effects on high school students is essential for validating our results for future research.

Why is it that people do not suppress their anger? The effects of a perceived approach-avoidance motive for interpersonal apology on angry feelings.

Ken-ichi Ohbuchi, *Tohoku University.*

Objectives: This study examined the effects of a perceived approach-avoidance motive for interpersonal and other types of apology on anger, and its effects on interpersonal relationships. Based on Clark and Mills's relationship typology (1993), the following hypotheses were formulated: (1) When an actor expressed remorse, anger would be more suppressed in close relationships than in non-close relationships; (2) when an actor offered compensation, anger would be more suppressed in non-close relationships than in close relationships; and (3) when an actor expressed remorse in close relationships, anger would be more suppressed by perceived approach motives for apology than by avoidance motives for the same.

Design: We conducted a role-taking experiment in which Japanese participants were presented with a hypothetical scenario wherein an actor accidentally, albeit considerably, harmed another person. In this scenario, 16 versions were developed by combining responsibility for needs (2), motives for apology (2), expressing remorse (2), and offering compensation (2).

Method: 86 Japanese university students participated voluntarily. Each participant was asked to read the scenario and rate the four items using a seven-point scale to measure angry feelings.

Results: We conducted a mixed-model ANOVA on the ratings of the angry feelings. This analysis revealed non-significant interactions of responsibility for needs/remorse/compensation, indicating that each type of apology remained unaffected by interpersonal relationships. Thus, Hypotheses 1 and 2 were not supported. However, the analysis revealed significant interactions of responsibility for needs/motives for apology/remorse/compensation, suggesting that anger would be more suppressed by perceived avoidance motives for apology than by approach motives for the same, when an actor expressed remorse in close relationships. This result considerably contradicted Hypothesis 3.

Conclusions: This research suggests that there is a high level of concern for interpersonal relationships wherein apologies are generally made among Japanese people.

J10

Unconditional respect for persons in an intergroup context.

Simon M. Laham, Mansur Laljee & Miles Hewstone, *University of Oxford.*

Objectives: Unconditional respect for persons has been a concept central to political and moral philosophy for centuries. This study applied a psychological conceptualization of unconditional respect for persons (measured by the Respect for Persons (RfP) scale, Lalljee, Tam & Lee, 2006) in an intergroup context. We hypothesised that (1) those high on RfP (i.e. people who value the integrity and autonomy of others) would have more favorable outgroup-directed attitudes and action tendencies; (2) that these effects would obtain over and above the effects of extant predictors in the intergroup domain; and (3) that these effects would be mediated by intergroup emotions.

Method: 64 student participants from the University of Oxford completed various individual difference measures pertinent to intergroup relations (RfP, Social Dominance Orientation (SDO), Agreeableness, intergroup contact) and then made various judgments (perceived self-outgroup overlap, outgroup-directed attitudes, emotions and action tendencies) about typical members of a rival university.

Results: Regression analyses revealed that RfP predicts outgroup-directed attitudes and action tendencies over and above SDO, Agreeableness and intergroup contact. Those high on RfP had more favorable outgroup attitudes and expressed greater intention to act positively and less intention to act negatively towards outgroup members than those low on RfP. Mediation analyses revealed that negative intergroup emotions mediated the effects of RfP on negative action tendencies and that perceived self-outgroup overlap mediated the effects of RfP on outgroup attitudes.

Conclusions: This research suggests that people's general attitudes towards humanity as captured by the RfP scale have important implications for judgments about particular outgroups. Results revealed that RfP makes a significant contribution to the prediction of attitudes and intended actions in the intergroup domain and that these effects are at least partly mediated by intergroup emotions. This research introduces an important new variable into the psychological study of intergroup relations.

J11

'They think they're the greatest': National football support and problematising 'identity' in Scotland and England.

Jackie Abell, *Lancaster University.*

Within social psychology, national identity has been understood as a social identity, necessarily involving matters of psychological attachment and belonging to a group. One arena thought to be the expression of this national belonging has been in support for the national football team. The growth in support for the England football team has been equated with a growing sense of English nationalism in the context of Scottish devolution. In Scotland, support for the national team is considered to be an expression of Scottish national identity in domestic and international contexts, and a crucial site for cultural and social representation. Drawing upon in-depth interview data it is suggested the relationship between national football support and national identity is more complex than previously assumed. The problematisation of the assumption that 'being' a nation is equivalent to 'feeling' a nation enables us to consider national football support as a strategy for expressing and rejecting feelings of national pride, the legitimising of national prejudice, and the assertion of political claims. Using the example of Scotland and England national football support, we note how participants may attribute national 'others' with collective feelings of 'national identity' in relation to football support and position themselves, personally or socially, in contrast. In England support for the team is distinguished from national identity. Participants distinguish their rational 'self' from the irrational expressions of nationalism typical of members of the far right. In Scotland expressions of support for a national football team in both England and Scotland are understood as legitimate collective representations of national identity. This warrants a positive Scottish national identity in contrast to the English.

J12

Music taste preferences and the social perception of gifted students.

Stuart M. Cadwallader & Jim Campbell, *The National Academy for Gifted and Talented Youth, University of Warwick.*

Objectives: This first phase of the study investigated the relationship between the music taste preferences of gifted students and demographic, attitudinal, psychological and behavioural variables. The second phase focused upon Heavy Metal music, which is perceived negatively by society and is therefore incongruent with the social perception of gifted and talented individuals. The purpose of the study was to examine the students use and perception of the genre.

Design: The study adopted a mixed-methods approach. A survey was constructed to ask about student's family, school attitudes, leisure time pursuits and media preferences. A standardised instrument to measure self-esteem and seven different self-concept factors was also included. With regard to music preferences, the survey required participants to rank favoured genres of music from a prescribed list. The study also included an online group interview to find out more about the attraction of Heavy Metal and to explore how the genre is perceived by those that favour it. The study was explorative in nature and so did not adhere to a specific theoretical framework.

Methods: Participants (*N*=1057) completed the survey (age M=14, range 11 to 18 years.). The results were analysed both descriptively and using ACORN, gender, self-esteem and self-concept measures. Gifted students (*N*=19) participated in an online group interview into their perception of Heavy Metal.

Results: Those who favoured music from the Heavy Metal genre reported lower self-concept scores for peer and parent relationships, as well as lower self-esteem. Results contradicted the popular stereotypes of gifted students being attracted to genres which are often culturally perceived as more intellectual or 'upper class' (Bourdieu, 1979). Students reported using Heavy Metal music cathartically to dispel negative emotions.

Conclusions: This research explores the findings and attempts to interpret them from a theoretical basis.

J13

Serial remembering: Written versus verbal remembering of stories.

Julie Udell, James Ost & Alan Costall, *University of Portsmouth.*

Objectives: Bartlett (1932) found that stories were transformed and changed as they passed from participant to participant – the method of serial reproduction (SR). However, Bartlett's participants actually wrote down the stories, rather than passed them on verbally, leading some authors to criticise his work, arguing that it might be the written method of transmission which is responsible for the transformations he famously observed (Edwards & Middleton, 1986). Yet, no study to date has examined whether the changes Bartlett observed as stories were passed from person to person differ as a function of whether the stories are transmitted verbally or in written form. The present study addressed this gap in the literature.

Design: A 2 (method of transmission: written vs. verbal) x 5 (place in a SR chain; first, second, third, fourth or fifth) independent measures design was used. Dependent variables were the number of words, details (i.e. specific units of information) and themes (i.e. 'gist' level information) recalled.

Method: 18 males and 22 females, aged from 17 to 73 years old (M=38.57 years, SD=11.51 years), were assigned to one of eight SR groups (each consisting of five participants) who passed on the 'War of the Ghosts', either verbally, or in written form.

Results: Three 2 x 5 ANOVAs revealed that while participants in the verbal transmission condition reproduced significantly more words than participants in the written transmission condition, there were no differences in the number of details or themes reproduced.

Conclusions: These findings suggest that criticisms of Bartlett's use of written, rather than verbal, reproductions may be unfounded. Although participants in the verbal condition used more words in their reproductions, the content of the reproductions (in terms of details and 'gist') did not differ significantly. Future research will extend these findings to examine the serial reproduction of more ecologically valid materials (e.g. rumours and conspiracy theories).

J14

Focusing social identities: Does congruent multi-layered social identities attenuate identification and pro-group behaviour?

Max Boehling, *University of Kent.*

Objectives: This study set out to test: (a) effects of hierarchically nested social identities similar to those found in organisation; and (b) the effect of identification on group members' motivation to perform. The objective was to simulate the structure of social identities in organisations, namely the organisational identity and team identity, and illustrate the importance of attractive identities.

Design: When testing the effect of the nested social identities a 2 (high or low super-ordinate identity) x 2 (high or low sub-ordinate identity) between participants design was applied. The association between identification and performance was a simple correlational design.

Methods: The study was programmed in a web-based program that simulated a team environment and made it possible to access the study from any computer with online access.

Participants: 118 completed two different types of task (brainstorming and cryptic tasks), in the simulated team environment. Although, participants were led to believe that they were working together with other participants in a team, the feedback they received from other participants were bogus computer simulations. Identification, task performance and time spent on the cryptic tasks were measured.

Results: A *t*-test of mean sub-ordinate identification in the high super-ordinate condition and control condition was significant. A *t*-test of mean super-ordinate identification in the high team condition and control condition was insignificant. These findings provide support for the hypothesised effect of a nested framework of identification and suggests that identification with a group can be accentuated when both the sub- and super-ordinate category level are attractive. Finally, the correlations supported a significant association between measures of identification and participants' motivation.

Conclusion: The results provide a firm indication that a nested framework of identities – such as that found in organisations – has strong effects on identification and group members' performance.

J15

A meta-analytic examination of mechanisms contributing to stereotype formation in the expectancy-based illusory correlation paradigm.

Tirza Leader, *University of Kent, Canterbury.*

The expectancy-based illusory correlation has been proposed as a predictor of stereotype formation (Hamilton & Rose, 1980), while essentialism of the social categories (Yzerbyt, Judd & Corneille, 2003) and cognitive load of the stimulus sentences (Mullen & Johnson, 1990) have been proposed to moderate this relationship. Essentialism was operationalized as the indicators of natural kinds and entitativity as developed by Haslam, Rothschild and Ernst's (2000) study of essentialism for the social categories employed in the stimulus materials. Cognitive load was operationalized as the number of stimulus sentences, the duration of the stimulus presentation and the verbal complexity of the stimulus sentences. For the first time, a meta-analytic integration of previous research on the expectancy-based illusory correlation was conducted. Studies were included if they met the following criteria: used adult participants from normal populations, allowed the extraction of a precise statistical test of the illusory correlation effect, and used the basic expectancy-based illusory correlation paradigm. These criteria resulted in 545 participants from k=32 includable hypothesis tests. The general combinations and comparisons reveal that the expectancy-based illusory correlation effect is significant and of moderate magnitude. Consistent with theoretical expectations, the results of this study demonstrate that the magnitude of the expectancy-based illusory correlation reflects responsiveness to the information that is being presented. Specifically, the expectancy-based illusory correlation effects are stronger when cognitive load and essentialism increases. Discussion considers the implications of the present research for theories of stereotype formation and the possible mechanisms of these effects.

J16

Facilitating the will to change in university students: Medium, momentum and standing up for the human rights of the people of Darfur.

Nadia Wager, *Buckinghamshire Chilterns University College.*

Objectives: The impetus for this study has come from an understanding of the catastrophic effect of bystander apathy on the proliferation of human rights abuses in general and genocidal activity in particular. However, what is often construed as apathy might be partly attributed as ignorance. Consequently, the aim of this study was two-fold. Firstly, to attempt to raise students' awareness of the desirability of international response to human rights abuses and to determine which presentation medium facilitates the greatest change. Secondly, to determine which presentation medium promotes the greatest intention to engage in positive action.

Design: This was a quasi-experimental study, employing a mixed-design and involving 65 undergraduate and conversion course students as participants.

Methods: Firstly, a Thurstone Scale to measure attitudes toward international responses to human rights abuses was developed. Secondly, the participants were divided into four groups: three experimental and a control group. In the written material condition students read an Amnesty International report on the Darfur crisis. Students in the video condition were shown a 14-minute video produced by the Aegis Trust. Finally, in the 'children's drawings' condition students were presented with the Human Rights Watch photo-gallery of drawings and dialogue produced by the children of Darfur. The students all completed the attitude scale, both at the beginning of the two-hour seminar, before presentation of the material, and again at the end of the session. One week later they were asked to complete a questionnaire asking about their experience of taking part in the study, whether they would be interested in setting up a student group to promote human rights interests and how much time they would be willing to commit.

Results: Chi-squared analysis indicates that significantly more of the participants in the 'children's drawings' condition experienced a positive attitude change (73 per cent) compared to those presented with the video (62 per cent), the written material (37 per cent) and the control group (15 per cent). A two-way mixed ANOVA revealed that the greatest magnitude of change was promoted by the video, followed by the 'children's drawings'. With regard to expressed interest in setting up a student group to promote human rights issues, a trend was revealed where the participants in the children's drawing condition expressed the greatest willingness (50 per cent), followed by the video (36 per cent), control group (31 per cent) and finally the written material (23 per cent).

Conclusions: It appears that seeing the impact of atrocity though the 'eyes of children' is more emotive than written material and to some extent more poignant than graphic video material. From the answers to the qualitative questions it appears that 'just world' theorising might help account for this. It is very difficult to see the victims as blame-worthy when they are children, our conviction to childhood innocence makes this less palatable.

J17

Spoiled for matchmaking choices: Characteristics of online dating and speed daters.

Monica Whitty, *Queen's University Belfast* **& Tom Buchanan,** *Univerisity of Westminster.*

Objectives: This study examined demographic and psychological variables influencing individuals' preferences for speed dating and online dating as means of finding romantic partners.

Design: Participants completed an online survey, requesting demographic data and information about their use of online dating, speed dating, and conventional forms of dating. Participants then completed measures of shyness, social anxiety, sensation seeking, extraversion, and initiating relationships competence.

Methods: Participants were recruited using three methods: some were invited by a manager of an online dating company to participate in the study; some were similarly invited by a manager of a speed dating company; and people who visited a personality assessment website were also invited to participate in the study. The final sample comprised 271 participants.

Results: Regression analyses revealed that individuals who scored high on shyness were more likely to have tried online dating and were more likely to rate online dating as a form of dating they would like to use in the future. Older individuals were more likely to have tried online dating and were more likely to want to use it as a method of dating in the future. A younger cohort of individuals was more likely to try out speed dating. A two-way ANOVA was used to test for differences in age among those who had or had not participated in online and speed dating. For this we found a significant interaction effect ($F(1,263)=.5.05$, $p=.025$, two-tailed) between the two.

Conclusions: Drawing from previous theories on dating methods we discuss why it might be that shy people and older people are drawn to online dating and why a younger cohort are attracted to speed dating.

The IRA apology of 2002 and forgiveness in Northern Ireland's troubles: A cross-national study of printed media.

Christopher Alan Lewis & Sharon Mary Cruise, *University of Ulster at Magee College*, **Mícheál D. Roe, Jessica Nee Brown & Tiffany Adams,** *Seattle Pacific University*, **Neil Ferguson & Eve Binks,** *Liverpool Hope University.*

Background: The present study provides a cross national exploration of the media and public responses to the 2002 Irish Republican Army (IRA) statement of apology for the hundreds of non-combatant deaths caused by them over the past 30 years. It was hypothesised that relational closeness to victims of the IRA campaign would affect attitudes towards the IRA apology, as would geographical closeness to the political violence in Northern Ireland; also within Northern Ireland there would be differences in attitudes toward the statement due to the ethno-political orientation of the newspapers' intended readership.

Design: The study explored responses to the statement in national, regional, and local newspapers across Northern Ireland, England, and the US. Data in Northern Ireland were collected through an archival search of national and selected local newspapers. In England, data were collected via an electronic archival study of local, regional, and national newspapers. In the US, data were collected through an archival search of the major newspaper for each of the top 10 US cities in terms of Irish American populations.

Method: All articles were content analysed by the lead researcher and independently by one of the co-researchers from each research team. The two analyses were brought together, discrepancies addressed, and themes and clusters of themes extracted.

Results: The results broadly supported the hypotheses, with the U.S. print media being generally more positive, and the English print media more negative in attitude toward the statement of apology. In England, those areas that had suffered directly from IRA violence tended to have the most negative reactions of all. In Northern Ireland, newspapers with a predominately Catholic readership responded to the IRA apology generally positively, while newspapers with a predominately Protestant readership responded generally negatively.

Conclusion: The results illustrate difficulties facing peace processes in settings of ethnic violence, and the complexity of responses to apology and forgiveness of relevant publics within and outside actual conflict areas.

Sport & Exercise

K01

The time course of attentional bias to threat in high-anxious, low-anxious, and repressors: An examination of sport threat scenes.

Marie A Ashmore & Nickolas C Smith, *Department of Exercise and Sport Science, Manchester Metropolitan University.*

Objectives: This study examined the time course of attentional biases to situation specific threat in high-anxious, low-anxious and repressor sports performers. Consistent with previous research, it was hypothesised that repressors would exhibit an early bias (i.e. 100ms post stimulus onset) towards threatening scenes followed by threat-avoidance at longer post stimulus-onsets (i.e. 500ms and 1000ms). High-anxious individuals were predicted to exhibit consistent threat-biased processing across all stimulus-onsets whilst low-anxious individuals were predicted to exhibit no such attentional bias.

Design: Participants completed a forced-choice, reaction time version of the dot-probe task consisting of 18 practice, 12 baseline, and 120 task trials. Task trials were spilt into three, 40 trial blocks with six practice trials and a short rest break between blocks. Each trial started with a fixation point followed by a combination of threat/neutral picture pairings presented randomly for 100ms, 500ms, or 1000ms either side of the fixation point. A two-choice (i.e. horizontal or vertical) dot-probe configuration then replaced one of the picture pair.

Methods: 48 participants (14 high-anxious, 21 low-anxious and 13 repressors) were selected from an initial pool of 120 sport performers, based on their scores on the Marlowe Crowne–Social Desirability Scale and the cognitive anxiety subscale of the Sport Anxiety Scale (Smith, Smoll & Schutz, 1990). Percentile splits of p60 on both scales were used in the current study.

Results: A significant main effect for stimulus-onset was found which, on follow-up, showed that irrespective of group, the 100ms stimulus duration condition was associated with a stronger bias towards threat than the 1000ms stimulus duration condition. Contrary to predictions, however, attentional bias scores between groups showed no significant difference and no interaction effect was evident. This implies that high trait-anxious sports performers do not exhibit attentional biases to sport-specific threat scenes. Similarly, repressors were found not to demonstrate the 'attend then avoid' attentional pattern shown in other research.

Conclusions: These findings are discussed within the theory of trait anxiety proposed by Eysenck (1997). Methodological implications and future recommendations are also identified.

Understanding the nature and role of physical activity motivation in late adolescence.

Andrew J. Martin, *University of Sydney* **& Herbert W. Marsh,** *University of Oxford.*

Objectives: Physical inactivity and increasingly sedentary lifestyles and are significant health risks in all countries. One important part of physical activity is the motivation to be active. The current study examines the motivation to undertake physical activity in late adolescence. This is a critical period in an individual's life because patterns established at this stage are influential into early adulthood and beyond.

Design: The study is cross-sectional, enabling large-scale quantitative data upon which to draw conclusions. Importantly, the cross-sectional data is also the baseline data for a second wave of data to be collected mid-2007 to understand the effects of the transition from high school on physical activity motivation.

Methods: All final year students from six Australian high schools were administered the Physical Activity Motivation Scale – Short (PAMS-S) along with a set of key correlates such as physical activity (Active Australia Scale), flow in exercise (Composite Dispositional Flow Scale), and physical self-concept (Physical Self Description Questionnaire).

Results: Analyses confirmed the factor structure of the PAMS-S using confirmatory factor analysis, the reliability of the four hypothesised factors, mean-level school effects and mean-level gender effects on physical activity motivation, and invariance of the hypothesised physical activity motivation factors across gender and school. Subsequent analyses then demonstrated the relationship between physical activity motivation and the set of key correlates thus providing a better understanding of the nature and extent to which physical activity motivation relates to important cognate factors.

Conclusions: Based on the findings, coaches, physical education teachers, and other practitioners are now better able to understand and target those aspects of motivation that hinder the physical activity process and at the same time provide intervention to facilitate those aspects of motivation that are likely to increase physical activity levels.

Male coach – Female athlete relationship: Child protection and perceptions of acceptability.

Sophia Jowett, Melina Timson-Katchis & Jonathan J. Rudge, *Loughborough University.*

Objectives: With child protection policy development and implementation moving rapidly forward, this project sought to understand on what basis do coaches and athletes assess a relationship as acceptable versus unacceptable.

Design: The study adopted a qualitative research design which better enabled the participants to examine issues that were salient to them.

Methods: Four coach-athlete dyads competing in tennis participated in the study. Coaches were male, qualified at performance coach level (approximately level 3) and had attended Child Protection training. Athletes were female and competed at a high level. Coaches and athletes participated in one-to-one in-depth interviews. Interviews were transcribed verbatim and content analysed.

Results: Results revealed that defining the line between acceptable and unacceptable coach-athlete relationships is difficult and mediated by individual differences. Both coaches and athletes were aware of child protection measures and on the whole agreed that these were beneficial in terms of creating a protective environment for both. For the coaches, the interviews indicated that of primary concern was the effect of child protection measures on the development of close coach-athlete relationships. Coaches felt that at times they found themselves focusing primarily on ensuring they were acting in line with child protection guidelines and consequently were not focusing on the athletes themselves. A common view expressed by coaches was that at times child protection measures were counterproductive to effective coaching. Athletes on the other hand, reported little impact of these measures on the way they related to their coach.

Conclusions: Results suggest that the current climate of child protection policy and implementation, needs to be re-addressed to ensure that it is not viewed as a conflicting but rather a central element of the coaching process.

K04

Coach-Athlete relationships in elite youth sport: Reflections from Tae Kwon Do.

Sophia Jowett, Joanna Wray & Melina Timson-Katchis, *Loughborough University.*

Objectives: Recently efforts have been made to investigate interpersonal relationships that young sport performers develop. The purpose of this study was to explore the interpersonal issues underlying the elite youth coach-athlete relationship within the context of a martial art sport.

Design: The study adopted a qualitative research design. The 3 + 1 Cs served as a rudimentary framework guiding the analytical processes and facilitated inferences to be drawn about the nature and quality of the coach-athlete relationship.

Methods: Five elite youth Tae Kwon Do athletes (three male, two female) and their national coach (male) participated in the study. In-depth interviews were conducted with each participant separately. These were then transcribed and content analysed.

Results: Analysis revealed that both the coach and the athletes alike were aware of interpersonal issues underlying their athletic partnership. Such issues included the need for trust and respect, a sense of commitment and cooperation so that together they worked to achieve their common goals. However, negative interpersonal issues were also present as both the coach and the athletes referred to constraints and issues of control. Coaches and athletes seemed to struggle particularly with the idea of how to approach each other and how to respond to each other, in light of the fact that all the athletes had pre-existing relationships with their own club coaches, who they interacted with on a more frequent basis. The national coach was not always sure how to maintain a level of positive influence without appearing as overly controlling, whereas the athletes were confronted with issues of loyalty to their club coach and future plans and progression within the sport.

Conclusions: The study unearths the intricacies involved in a coach-athlete relationship at the elite youth sport level. Whilst the findings are consistent with previous research, they do offer some valuable insights with regards to organisational structure of elite sport and the impact of this on coach-athlete relationships. Results suggest that enabling coaches and athletes to establish and develop a working partnership are important issues for both coaches and athletes and more research is required so as to draw guidelines for coaches and national governing bodies of sport that aim to help and nurture the youth athlete successfully.

K05

Longitudinal analyses of stressors and affective states among professional rugby union players.

Adam R. Nicholls & Susan H. Backhouse, *Leeds Metropolitan University,* **Remco C.J. Polman,** *The University of Hull* **& Jim McKenna,** *Leeds Metropolitan University.*

Objectives: This study examined the sources of stress, their associated symptoms, and affective states on rest, training, and match days among a sample of professional rugby union players. Also examined were the temporal aspects of sources of stress, associated symptoms and affective states in relation to the day before a competitive match, match days, and the day after a match. It was hypothesised that the players would experience more stress and tense arousal on match days than either rest or training days, or the day before or day after a match.

Design: A within subject's prospective design was used.

Methods: 16 professional rugby players took part in the study. Players completed the Daily Analysis of Life Demands in Athletes (DALDA) and the Activation Deactivation Adjective Check List (AD ACL) daily at 21:00 hours for a total of 28 days.

Results: MANOVA analysis revealed that players report different stressors affecting them on different days and more stressors being worse than normal on training and rest days compared to match days. The participants also reported more stressors being worse than normal the day after a match than on match day. Players' activation levels were in the low and unpleasant quadrant of the circumplex model during the study.

Conclusions: The results did not support our hypothesis. Results indicated that professional rugby union players experience stress from a variety of sources and feel many symptoms which vary as a function of the day. In addition, the players reported low and unpleasant activation over the assessment period. Applied practitioners should focus their attention on mental skills packages to manage training and post-match stress.

Assessing the content validity of an expanded measure of the coach-athlete relationship.

Daniel J.A. Rhind & Sophia Jowett, *Loughborough University.*

Objective: This study forms part of a larger project which aims to develop and validate an expanded version of an existing measure of the quality of a coach-athlete relationship (see, Jowett & Ntoumanis, 2004), based on the 3+1Cs (Closeness, Commitment, Complementarity and Co-orientation) relationship model (Jowett, 2006, 2007). The aim of this element of the project was to develop items for inclusion in the expanded questionnaire and to assess their content validity.

Design: A total of 95 items were identified, modified or developed for Closeness, Commitment, and Complementarity (3Cs) based on previous theoretical and empirical work. Items were reviewed by an expert panel for relevance, clarity and specificity.

Method: Four questionnaires were developed for each of the 3Cs: • Coach direct – coach perceptions of his/her relationship with an athlete • Athlete direct –athlete perceptions of his/her relationship with a coach • Coach meta – coach inferences relative to how an athlete feels, thinks and behaves toward the coach • Athlete meta – athlete inferences relative to how a coach feels, thinks and behaves toward the athlete. Twelve separate questionnaires were designed, each of which were given to an expert panel. A total of 44 experts took part in the assessment of the content validity of the items. Expert panels included at least one subject-matter expert (academic and/or consultant), a PhD student in sport psychology, and either a coach or an athlete.

Results: Support was given for the content validity of 64 items by the expert panels (21 for Closeness, 20 for Commitment and 23 for Complementarity).

Conclusions: 64 items were found to be valid items for inclusion under the 3 Cs dimensions of the coach-athlete relationship model. The next phase of validation will assess the construct and factorial validity of the various versions of the expanded CART-Q employing confirmatory factor analyses.

K07

A bi-exponential model of mood change during and after short-duration maximal-effort exercise.

Dominic Micklewright & Ralph Beneke, *University of Essex.*

Objectives: The purpose of this study was to describe how mood state responds to a short bout of exhaustive physical exertion and a subsequent period of resting recovery. This work contributes to the development of a predictive model of mood state dynamics in response to, and during the recovery from exercise of varying mode, duration and intensity.

Design: A quasi-experimental design was used in which participants performed a maximal effort cycling test followed by a one-hour period of seated rest.

Methods: 22 male participants performed a 30-second maximal effort Wingate anaerobic cycling test (WAnT). Mood state was recorded using the Profile of Mood States Questionnaire (POMS) immediately before the WAnT, immediately after the WAnT and then at minutes 5, 10, 15, 20, 30, 40, 50 and 60 during the recovery period. The dynamics of total mood disturbance (TMD) was described using a bi-exponential term: $y = a(1-\exp^{-t/¥óa}) - b(1-\exp^{-t/¥ób}) + c$, where a and b are the amplitudes of mood disturbance and recovery, ¥óa and ¥ób are the corresponding time constants and c is the pre-test TMD score.

Results: The bi-exponential model adequately described the dynamics of TMD (mean $r^2 = .915$). There was no difference between a and b (41 vs. 46, $t = -1.3$, $p > .05$). ¥óa was shorter than ¥ób (.12 vs. 18.2 min, $t = -5.4$, $p < .001$). Time constants of disturbance and recovery were independent of the corresponding amplitude.

Conclusions: Short periods of exhaustive exercise provoke a substantial and sudden change in mood state which takes approximately 90 minutes to recover from. These findings have a relevance to everyday occurrences, such as sprinting to catch a bus or running up a flight of stairs, in addition to the more obvious implications for sports performers.

K08

Motivational and performance effects of different imagery perspectives.

Tamsin Frost, *University of Liverpool* **& Dave Smith,** *University of Chester.*

Objectives: Imagery research has focused on the learning and performance enhancing effects of imagery. In comparison the motivational effects of imagery have been understudied. Research has suggested that imagery perspectives may influence motivation differently. This study investigates the effects of imagery perspective using a motivational type imagery intervention on pursuit rotor performance and motivation to practice.

Design: A pre-test post-test equivalent group design was used.

Methods: Participants (N=38, 16 males and 22 females) were assigned to an internal imagery group or an external imagery group depending on their preferred imagery perspective. Informed consent was gained. Following the pre-test, participants physically practiced a pursuit rotor task twice a week for a three-week period. These practice sessions were divided into a supervised period and a free-time period where participants could practice the task for as long as they wanted. This practice period was timed; participants were unaware of this until the debrief session, following the post-test. The first three sessions were learning orientated (focused on technique) and the final three sessions were performance orientated (focused on time on target) during which participants were given unobtainable goals to achieve. In addition to the physical practice, participants imagined performing the task successfully and the positive emotions associated with a great performance from their preferred perspective. Participants used personalised imagery scripts and the sound of the pursuit rotor to aid their imagery experience, five times per week. Intrinsic motivation was also measured during the intervention period using the Task Reaction Questionnaire (TRQ, Mayo, 1977).

Results: Independent t-tests revealed that there was no significant difference between groups on pre-test imagery ability, performance, or intrinsic motivation. Three separate Group x Test ANOVA's will be calculated to examine intrinsic motivation and performance scores. The results are pending. This study will help provide additional information for sport psychologists relating to which imagery perspective is more beneficial for motivational type imagery interventions.

K09

'Different pictures similar stories?' – Comparing junior dressage riders group concept maps of factors affecting performance.

Moira E. Lafferty, *University of Chester.*

Objectives: When working with junior athletes in group situations one of the challenges faced by sports psychologists is how to gain insight and understanding of the athletes view of the performance environment. One technique that may be of use is concept mapping described as 'a schematic device for representing a set of concept meanings embedded in a framework of propositions' (Novak & Gowin, 1984), however little information is available as to its applicability within the applied sports psychology domain. This research redresses this imbalance by exploring the use of concept mapping in sports psychology workshops for junior athletes comparing maps prepared by four different groups.

Design: Independent group design.

Method: At the penultimate sports psychology workshop session each group prepared a concept map showing factors that affected performance and how the psychological skills and techniques discussed were utilised. To reduce biasing each group received the same instructions and concept-mapping package (cue-cards and mapping equipment). Standardised scoring techniques and matrix analyses were used to identify between concept relationships and links for each map, data were combined to indicate between group similarities. Findings are described using qualitative thematic analysis.

Results: Between group analyses indicate that similar beliefs are held about the impact of; competition experience, support, determination to improve, willingness to accept advice, trust in the horse rider combination and the influence of confidence upon performance. The use of basic psychological skills emerged as a recurrent theme between maps however the intra-skill relationships and use differed between groups.

Conclusions: Results suggest that concept maps are a useful tool for highlighting similarities and differences in how groups of athletes, in this case junior dressage riders view the performance environment and how they use the psychological skills and techniques discussed in the workshop sessions. Key discussion points include the implication of these findings and the advantages and disadvantages of the concept mapping technique for the applied practitioner.

K10

Attentional focus influences muscle activity and force production during arm-curl movements.

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Instructions which emphasise either an internal (movement related) or an external (outcome related) attentional focus have been shown to significantly effect the quality of movement execution and levels of muscular activity, suggesting a number of application opportunities. But research has yet to address influences on force production during such movements, despite research suggesting attentional strategies can be beneficial.

Objective: To quantify the influence of internal and external attentional focusing strategies on force production and muscular activity during single arm isokinetic bicep curls.

Design: All participants, using a within-participant design, performed the task using internal focus (movement related) and external focus (outcome related) instructions.

Methods: 25 participants (age 19 ± 28 yrs) carried out 10 maximal concentric elbow flexions on a dynamometer at an isokinetic speed of 60o/s. Work was calculated using the Biodex System 3 Dynamometer and surface EMG activity of the biceps brachii (iEMG) was measured, each normalised to a Maximal Voluntary Contraction (MVC).

Results: The internal strategy resulted in significantly higher muscular activity (iEMG) than the external strategy ($F(1,24)=4.46$, $p=0.04$, partial eta squared=0.16), measuring 154.99 per centMVC and 127.55 per centMVC respectively. Additionally, The internal strategy resulted in significantly higher Work (J) than the external strategy ($F(1,24)=6.48$, $p=0.02$, partial eta squared=0.21), measuring 93.80 per centMVC and 108.78 per centMVC respectively.

Conclusions: Analysis of the EMG time history showed that the internal focus strategy resulted in higher observed iEMG but lower Work values compared to the external focus strategy, suggesting more efficient movements during the external focus directed movements. As such, muscular activity increased using an internal strategy is potentially important in rehabilitation settings. Whereas an external strategy is beneficial if the outcome of a movement is maximal effort. Such findings support and add to previous research in the area of attentional focus and motor performance research.

K11

Personal and situational factors influencing coping among national level university athletes.

Tracey J. Devonport & Kevin A. Davies, *University of Wolverhampton.*

Objectives: Lazarus (1999, 2000) and Folkman (1992) outlined the importance of studying the coping responses of unique subgroups to better understand how some individuals adapt to stress while others do not. When exploring coping, the Transactional Model of Stress (Lazarus & Folkman, 1984) suggests that personal and situational factors are taken into account during cognitive appraisal. The present study explored personal and situational factors influencing coping amongst competitive student-athletes, with a view to developing theory-driven interventions.

Design: Researchers have argued the need for qualitative research to develop understanding of the transactional stress process (Folkman & Moskowitz, 2004; Lazarus, 1999). Therefore, data were collected using semi-structured telephone and face-to-face interviews.

Method: Volunteer participants were recruited using purposive sampling. University student-athletes (N=20) were asked to identify and reflect on those personal and situational factors that they perceived to influence coping. It should be noted that participants were encouraged to consider this question across contexts including academic, sport, work and social. Data were analysed using inductive and deductive approaches.

Results: Content analysis indicated a number of personal and situational factors influencing the coping process. Results were equivocal in terms of identifying factors that were commonly reported as either adaptive or maladaptive. Personal factors included injury history, previous competitive experiences, optimism, personal goals, commitment, attitude, and perfectionism. Situational factors include support networks in which key personnel were identified including university tutors, family and friends, employers, team-mates, and coaches. Uncertainty across a range of sport-related factors such as team selection, sponsorship, the stability of the coach and organisation were also identified.

Conclusions: Results identify a number of factors that may influence coping. Raising awareness of these factors amongst those individuals who work with student-athletes should be the first step in enhancing coping effectiveness.

K12

Motivation and coping among student-athletes.

Jamie A. Scott, Tracey J. Devonport & Andrew M. Lane, *University of Wolverhampton.*

Objectives: Students whose motivation is self-regulated have a greater interest towards education; this manifests enhanced performance, persistence and creativity. When completing a degree, there is a greater emphasis on independent learning at Levels 2 and 3. Research indicates that autonomy is facilitated by adaptive coping strategies such as planning and seeking instrumental support. It was hypothesised that students would become more extrinsically focused during the completion of a degree as Level 3 students become more focussed on degree classification than the intrinsic interest of learning subject-specific information.

Design: A between subject design was used to compare data over time.

Method: Following institutional ethical approval, 426 (Level 1, N=229, Level 2, N=110, Level 3, N=87) sport students completed the Academic Motivation Scale (Vallerand, Pelletier, Blais, Brieve, Senecal, & Vaillieres, 1992), and the MCOPE (Crocker & Graham, 1995). This was completed at the start of the academic year. This process was repeated annually for three years.

Results: MANOVA results indicated significant multivariate effect (Wilks Lambda 38,820=.86, p=.006, Eta2=.07). Univariate differences indicated that behavioural disengagement (F=3.86, p=.02, Eta2=.02) was significantly higher among Level 3 students and venting of emotions lower was significantly lower among Level 1 students (F=3.60, p=.03, Eta2=.02). There were no significant changes in student motivation.

Conclusions: It is suggested that changes in behavioural disengagement and venting of emotions are linked with lower levels of stress at Level 1. This lends support to the notion that emotions are an integral part of the stress process.

K13

Psychological characteristics which identify elite level sport performers: The moderating role of hardiness.

Michael Sheard & Jim Golby, *University of Teesside.*

Objectives: Evidence drawn across a variety of work environments suggests that hardy attitudes facilitate optimal professional functioning (Maddi & Khoshaba, 2005). Surprisingly, however, other than a handful of notable studies involving single sports (cf. Golby & Sheard, 2004; Sheard & Golby, 2006), to date, little empirical attention has been devoted to replicating such findings in the realm of competitive sport. This study examined the potential of the hardiness construct in predicting sporting success. It was hypothesised that, relative to all other competitive standards, competitors operating at International level (the highest) would score significantly higher in hardiness.

Design: Ex post facto design.

Methods: Volunteers (N=1462; M age=21 years; SD=5.64) were drawn from 31 sports and were presently competing at either International, National, County/Provincial, or Club/Regional representative levels. They completed the 18-item Personal Views Survey III-R (PVS III-R; Maddi & Khoshaba, 2001) in their respective training camps.

Results: MANOVA revealed that International competitors scored significantly higher (p<.001) in all hardiness components (commitment, control, challenge, total hardiness) compared to counterparts in each of the other three competitive levels. Post hoc stepwise discriminant function analyses predicted that a combination of control and commitment successfully discriminated 55 per cent of International level participants; this prediction rose to 65 per cent for total hardiness.

Conclusions: This research identifies that a psychological profile that includes high levels of hardiness appears to distinguish elite level competitors.

Index of Poster Authors

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