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Postgraduate Affairs Group

Annual Conference, University of Plymouth, 14–16 July 1997

Indicative conditionals: Can we account for patterns of reasoning with Bayes' theorem?

EJ SUTHERLAND, University of Derby

Traditionally, research has found that performance on Wason's (1966) selection task is poor when using indicative rather than deontic conditionals. However, it is well documented that a number of factors can influence subjects' performance on the task (Donimowski, 1995). Manktelow and Over (1991) clearly demonstrated an influence of utility, a construct traditionally associated with decision making research rather than reasoning research, when reasoning with deontic conditionals. The present research considers another construct from decision making research, that of probability, and examines the influence of probability on subjects' choices when incorporated into the Wason selection task. The research has resulted in a new version of the selection task, specifically designed for use with probabilistic manipulations, and results are discussed in terms of the mental models, mental logic and optimal data selection theories.

This abstract was omitted from Proceedings, Volume 7, No 2, August 1999.

Department of Psychology & Speech Pathology, Forensic Research Group

One-day Conference, Manchester Metropolitan University, 1 May 1999

Needs and risk assessment in young offenders: A mental health perspective

S BAILEY & C SMITH, Mental Health Services of Salford NHS Trust

Background: Professionals have to carry out best practice (practice of least harm) in a climate influenced and driven by legislation. Professionals acknowledge that access to mental health services has to be improved and that thresholds continually change. All practitioners have a role to play in need and risk assessment. Health Needs Assessment has a clear theoretical base in adult literature. There is a paucity of research specifically detailing variables e.g. impact of early onset mental illness, brain dysfunction, intelligence quotients discrepancies, relationship and/or adjustment difficulties that increase the propensity for adolescents to engage in challenging/offending behaviour.

Aims: To develop and validate health needs and risk assessment tools for a special population that will enhance both quality and consistency of assessment alongside informing management strategies.

Method: Stage One: Examination of multi-disciplinary/multi-agency literature, construction of scale, consultation and ratifying of scale.

Stage Two: Utilise tool across a number of sites e.g. open/secure local authority care establishments, in-patient (Child & Adolescent/Forensic) and out-patient (FACTS team).

Stage Three: Statistical analyses to assess inter-rater, inter-item, test/re-test reliability, factor analysis to determine high/medium/low weighting and follow-up data to assess predictive validity.

Discussion: The Adolescent Forensic Service has highlighted the need for better classification based upon aetiological consideration and recognition that classification may assist the practitioner's prediction of future risk. Within the arena of multi-agency risk assessment it is important to raise the awareness of the mental health component to overall profile of risk.

A preliminary study of detectives' attitude to stalking

MJ BERRY, Dept of Psychology & Speech Pathology, the Manchester Metropolitan University

This preliminary study of detectives' attitude to stalking was carried out on 28 detectives from a regional force. It explores their attitude to the phenomenon, looking at their working definitions of the term, their knowledge of victims and perpetrators and their experience of investigating the crime. A group of trainee forensic psychologists were used as a comparison group. Differences and similarities will be highlighted. The study will report on the professional awareness of the detectives, a viewpoint not influenced by length of service, gender or experience.

What psychologists can offer lawyers

P EDWARDS, Lawyer, Merseyside

Forensic Psychology is currently developing in many different areas, including in courts and other legal contexts. This speaker will talk about these developments from his extensive experience in such situations, and suggest what future developments may occur.

Stalking of therapists: Are we fighting or feeding?

DA HOLMES, M TAYLOR & A SAEED, Dept of Psychology & Speech Pathology, the Manchester Metropolitan University

The problem of stalking has become a greater focus for research attention during the last decade of the Millennium, the first decade in which legislation specifically directed at the behaviour has been implemented in a number of countries. Stalking often precedes serious serial crime but most stalkers do not physically attack their victims. Other popular misconceptions about stalking have led to those at risk to be unaware of the dangers and reluctant to act as the stalking scenario unfolds. Most stalkers are acquainted with their victims and the victims are not usually famous, as in erotomaniac or narcissistic stalking, but unfortunate participants in encounters with their future stalker. Stalkers are not lonely affectionate people, they usually have forensic or psychiatric histories as well as relationship problems.

This paper summarises two pieces of ongoing research which raise issues beyond the outcome of the studies. The first concerns a relatively benign case of anonymous missives sent to the head of a university department in the UK. This case demonstrates the importance of the effect on the victim, who in this case feels no real threat or fear, despite the persistence and threat content of the letters. The second concerns the more serious plight of clinicians, who become stalking victims as a consequence of their occupations.

Clinicians enter professional relationships with their clients, who are by definition people with problems. Despite underreporting, studies have demonstrated that this places these therapists, counsellors etc. at risk from stalking. Thus our second ongoing study follows American research that has investigated stalking among these professions. These have revealed that clinicians have been so ill prepared for stalking by clients, that they only realise the dangers when they are in the grip of a stalker's attention. Furthering the clinician's plight, the very legal and ethical processes intended to counter such harassment may be assisting the stalker. In this study, we are looking at the situation in the UK with regard to training and support amongst other factors. As part of our methodology, clinicians (and non-clinicians) are being surveyed at a site on the internet protected from 'cyberstalking'.

Research in forensic learning disability

C KIERNAN, Hester Adrian Research Centre, University of Manchester & C BAILEY, the Manchester Metropolitan University

Traditionally, people with learning disability who offend or who behave in ways which endanger themselves or others, were institutionalised either with or without Sectioning under Mental Health legislation. Although Secure Units remain a part of the spectrum of services the closure of long-stay institutions for people with learning disability has shifted the balance of service provision to community services. This change has brought into focus the needs of people with learning disability who offend, are at risk of offending, or have similar service needs, through Government reports (cf. Department of Health and Home Office, 1992) and in the development of services.

Community services for people with learning disability have, to date, catered mainly for people with severe learning disability, whereas people with learning disability who are at risk of involvement with the criminal justice system tend to be mainly people with mild learning disability. New community oriented services are therefore being developed by staff who are typically acquiring new skills without formal training. Research on this population is sparse. The presentation will outline various types of research which are urgently needed. At one level, research is needed to explore the scope and form of services which are provided. People with mild learning disability are a sub-group of less able people who are 'vulnerable' because of restricted academic and adaptive behaviour. An interview based study (Bailey, 1999) suggests that some services are targeting only people who are learning disabled in strict psychometric terms, others are extending their scope to people with identical service needs who are not learning disabled. These differences alone highlight the

need for research on which to base service planning. This issue is related to questions about the numbers of people at risk of offending and the reasons why they offend (Kiernan, Dixon & Smith, 1999). At other levels there is little research on the effectiveness of different patterns of service provision (for example the effectiveness of specialist units), the interaction of people with learning disability with the criminal justice system (including criteria for involving the system in potentially offending behaviour in community residential provision), or appropriate methods and effectiveness of psychological treatments.

Although a minority group, people with learning disability who offend, are at risk of offending, or have similar service needs are significant in human and service terms. Given the early stage of development of services for the group, research in the field offers an important opportunity to shape the pattern of service delivery and treatment.

References

- Bailey, C. (1999). *Interview study examining service providers' experiences of services for adults with learning disability who display offending behaviour*. Thesis submitted for the Degree of BSc in Psychology and Speech Pathology, Manchester Metropolitan University. Department of Health & Home Office (1992). *Review of Health and Social Services for Mentally Disordered Offenders and Others requiring Similar Services. Final Summary Report*. (Chair: Dr J. Reed). London: HMSO.
- Kiernan, C., Dixon, C. & Smith, J. (1999). *People with learning disability who offend, are detained, or are at risk of offending or being detained*. Submitted for publication.

Developments in forensic service since the Runciman Inquiry Report into miscarriages of justice

P OKJIE, School of Law, the Manchester Metropolitan University

The aim of the paper is to provide a perspective on forensic science relation to evidence in court. The paper will provide an appraisal of forensic science in the context of the law of evidence since the publication of the Runciman Report and the enactment of the criminal Appeal Act 1995, and the Criminal Procedure and Investigations Act 1996.

The paper will discuss the re-organisation of forensic science services post-Runciman and consider the likely effect of the re-organisation on miscarriages of justice in the criminal justice system.

A multi-variate model of rapists' actions

S REDDY, Lancashire Constabulary & J EVANS

This paper investigates the variations in crime scene behaviour revealed in a sample of victim statements in cases of stranger sexual assault. Building on previous findings by Canter and Heritage (1990), and Canter (1994), it was hypothesised that offences could be differentiated as either hostile, controlling or involving forms of behaviour.

To test this hypothesis crime scene data from the first detected offence of 112 British rapists were analysed using a multi-variate statistical

procedure to explore the patterns of co-occurrence of crime scene actions. The results provided empirical support for the three behavioural themes.

The implications that these findings have for the investigation of stranger sexual assault and treatment of offenders and victims are discussed.

The potential usefulness of integrity testing for the selection of police officers

K ROWLEY & M TAYLOR, Dept of Psychology & Speech Pathology, the Manchester Metropolitan University

The integrity of Police Officers has recently become a major public and official concern. One approach to improving the integrity of an organisation is to use individuals' self-reports of integrity as one of the bases for selection, placement and promotion. Such self-report tests avoid the difficulties of other approaches which may be construed as overly-intrusive or as entrapment. Self-report measures, however, have their own set of difficulties - not least is the question of what is actually being measured by such tests. At its most basic, what can meaningfully be concluded when a dishonest person is asked if they are honest? This presentation will address this question by providing:

- A brief review of the current literature on the criterion-related validity of integrity tests
- A description of a new British test of Integrity (Giotto) and an exploration of how this test attempts to reduce impression-management (faking)
- The results of a study investigating the extent to which Giotto can be faked to match the role of Police Officer
- A model which explores the reasons for the criterion-related validity of integrity tests

Is it possible to assess risk?

S WALKLATE, Professor of Sociology, Dept of Sociology, the Manchester Metropolitan University

Historically the prediction of risk is rooted in gambling and the mathematical models of prediction which such concerns generated (Adams, 1995; Bernstein, 1996). Arguably it is this version of risk and risk assessment which has deeply penetrated social scientific approaches to this issue. Nowhere has this been less apparent than within the realm of criminology (Walklate, 1997). Yet as Kemshall (1996), amongst others, has pointed out this version of risk and risk assessment is not without difficulties when efforts are made to translate such an approach to practice. Some of those difficulties are associated with the problems of perception and organisational focus. Others, however, may be more deeply rooted. Emanating from the views expressed by Douglas (1992) this paper will argue that the assumption that the avoidance of risk is the rational course of action has led the risk assessment process to accept a limited understanding of the nature of human agency. It will be argued that this limited understanding partly produces the difficulties associated with risk assessment and that risk assessment will be rendered more meaningful when at both the theoretical and the practical level the shackles of actuarial risk are cast aside.

Division of Health Psychology

Annual Conference, University of Leeds,
1–3 September 1999

Socio-economic differentials in health: How much does stress explain?

G DAVEY SMITH, Dept of Social Medicine, University of Bristol

Overall health status is strongly associated with socio-economic position: the poorer you are, the shorter your life expectancy and the longer the period you spend in ill health. Against this general background, however, there is considerable heterogeneity in the associations between socio-economic position and specific health problems. For example, several cancers are more common amongst more privileged members of society. The data suggests that specific reasons for the socio-economic distribution of specific causes of death and ill-health need to be searched for, and that some general explanation (for example stress leading to increased endocrine levels and immune suppression) is unlikely to apply. There is a large literature relating self-reports of stress to disease. Analytical studies suggest that negative affectivity (leading to associations between reported levels of stress and reported morbidity because of an underlying reporting tendency), confounding (reports of stress being related to other factors which influence disease risk) and reverse causation (ill-health leading to increased perceptions of stress) make interpretation of these findings difficult. Studies with physiological measures of stress (for example blood pressure reactivity) have not provided convincing evidence that these factors predict future disease risk. Furthermore, the literature relating neuroendocrine indicators of stress – which are frequently used as surrogate endpoints in studies – to future disease are very limited. Further studies are required to determine whether the biologically plausible associations between physiological responses and future disease risk are actually important determinants of ill health within populations. The degree to which stress accounts for the socio-economic differentials in health unexplained by conventional risk factors remains to be determined.

The conundrum of depression, social support and ischaemic heart disease: Recent evidence

N FRASURE-SMITH, McGill University & Montreal Heart Institute, Canada

Depression is a common co-morbid condition affecting almost all medically ill populations studied. Our research in coronary patients has documented that some 15 per cent of those admitted for acute myocardial infarction (MI) and unstable angina meet DSM-III-R criteria for current major depression, and another 20 per cent have some more minor form of depression. Similar rates of depression have been reported by other researchers working with post-MI samples. Although depression tends to be a chronic condition with a clear impact on quality of life, and is a major cause of disability, its impact can be even more profound. Research has shown that depression is an independent predictor of cardiac mortality over 6 to 18 months following MI, and that the risk is not restricted to major depression. Recent work also indicates a depression-related increase in the risk of one-year cardiac events in patients admitted for unstable angina. In addition to reviewing this data, as well as recently completed 3-year follow-up information on previous samples, this presentation will consider the possibility that at least part of the relationship between depression and prognosis reflects cerebrovascular correlates of heart disease (vascular depression). Evidence suggesting that very high levels of social support may moderate the impact of depression on mortality and reduce levels of depressive symptoms will also be discussed. The presentation will conclude with suggestions for avenues for future intervention and research.

WORKSHOP

Professional qualification and consultancy

S MICHIE, Psychology and Genetics Research Group, King's College, London, C BARLOW, Lloyds TSB Bank plc, London, L WALLACE, School of Health & Social Sciences, Coventry University & C ABRAHAM, School of Social Sciences, University of Sussex

In developing health psychology as a profession, the Division has defined the knowledge base and core skills necessary for professional qualification. The workshop will outline the training route for this qualification, which will be necessary for becoming a Chartered Health Psychologist from September 2001. Becoming chartered will require: being eligible for BPS Graduate Basis for Registration; an MSc from an accredited health psychology course (or a pass in a BPS-equivalent exam); two years experience as a health psychologist with demonstrated competence in three areas: research, teaching and consultancy. Assessment will be by portfolio and interview. Information about performance requirements and plans for the development of the qualification will be given. The second part of the workshop will focus on consultancy, a practice well suited to the knowledge and skills of health psychologists and with considerable potential for development. The workshop will cover: its theory and practice; the skills required for the qualification; some concrete examples of consultancy work.

SYMPOSIUM. ADHERENCE TO TREATMENT IN MEDICAL CONDITIONS

Sticky-back plastic, sellotape or is it scotch tape? Adherence, compliance or is it concordance?

LB MYERS, Dept of Psychiatry & Behavioural Sciences, University College London

Adherence to treatment is a major problem with an average of around a third of patients being non-adherent to a particular regimen. This paper discusses some of the major issues in the area of adherence. Firstly, various conceptual and methodological problems are explored. For example, there is little consensus in terminology, with 'adherence', 'compliance' and 'concordance' all used to describe the problem, and there are difficulties in measuring adherence. Secondly, the contribution of psychology in attempting to explain non-adherence will be discussed. This contribution includes models of health behaviour, memory, and doctor-patient communication. It is concluded that health psychologists have an important role to play in tackling non-adherence in collaboration with other health professionals, leading to harmonised definitions and agreed research methods in order to accumulate a body of knowledge, which will allow effective interventions to reduce non-adherence.

Compliance or concordance – what's the difference?

B ALDER & J DOWELL, Dept of Epidemiology & Public Health, University of Dundee, Ninewells Hospital & Medical School, Dundee

Approximately half of prescribed medicines are not taken as directed, but such non-compliance may be a rational choice. Prescribing may be seen as an experiment carried out by the doctor and medicine taking as an experiment carried out by the patient. A concordant model of prescribing aims to optimise health gain compatible with what the patient desires and is capable of achieving. The desired outcome is health gain, rather than

compliance. Lack of concordance denotes a failure to come to an understanding, not a failure of the patient to understand. Dowell's therapeutic decision model suggests that there are three broad groups of responses to medication: passive acceptance based on perception of doctor's intended medication; active use of treatment based on their own rationale, and total rejection. Concordance recognises two sets of health beliefs, and acknowledges that both sets must be accommodated within a therapeutic alliance.

Medication beliefs and adherence to Haart?

R HORNE, S PEARSON, H LEAKE, M FISHER, J WEINMANN, Dept of Pharmacy, University of Brighton, Brighton Health Care NHS Trust & GKT Medical School, London

The aim of this study was to assess the necessity beliefs and concerns of HIV positive individuals about highly active anti-retroviral treatment (HAART), a regimen which has greatly improved the prognosis of HIV/AIDS, and whether these beliefs were related to adherence. Thirty-seven patients receiving HAART completed a validated questionnaire assessing their beliefs about HAART. Adherence was measured by patients' report and viral load. Beliefs about HAART were related to adherence. Patients were significantly more likely to report high adherence if their beliefs in the necessity of HAART outweighed their concerns about it. Patients who attained lower necessity belief scores were significantly more likely to have attained a viral load > 400 at the last test. Further studies are ongoing, but these preliminary findings suggest that a medication perceptions approach may be useful in understanding adherence to HAART.

Community pharmacist providing an adherence management plan for elderly patients

DKT RAYNOR, M NICHOLSON, D PETTY, J NUNNEY & P KNAPP, Division of Academic Pharmacy Practice, University of Leeds

The aim of the study was to determine whether community pharmacists can implement an adherence management plan in-patients at high risk of non-adherence. Six community pharmacists selected a random sample of patients over 64 years (n=143), living alone and on four or more medicines. A structured questionnaire administered at home covered medicine related problems and patient-reported adherence, after which the pharmacist drew-up individual action plans (time 1). After two months, a different pharmacist repeated the patient-reported adherence questionnaire (time 2). There was a trend towards improved self-reported adherence between time 1 and time 2 (66 per cent vs 57 per cent). All patients were happy with a home visit and 54 per cent said overall, the pharmacists' visits had made their medicines easier to manage. The results suggested that visiting patients at home and implementing an action plan is feasible, acceptable and may improve self-reported adherence.

Participation in bowel screening in the flexiscope trial: Development of an intervention to increase adherence

J WARDLE, S WILLIAMS, K McCAFFERY, T TAYLOR, S SUTTON & W ATKIN, Health Behaviour Unit, Dept of Epidemiology & Public Health, University College London

Screening for early pathological changes is one of the most important means available to reduce cancer mortality. This makes maximising screening attendance a priority in behavioural cancer prevention. The Flexiscope Trial is a multi-centre trial of once-only flexible sigmoidoscopy to reduce bowel cancer mortality. The determinants of adherence are being investigated using the broad framework of the

Health Belief model in (i) a large prospective study of the predictors of screening participation, (ii) interviews with attenders and non-attenders, and (iii) an intervention study which attempts to modify key predictor variables through a screening information booklet, and thereby increase participation. This paper will describe the development of the intervention and present preliminary results on its impact. At the first stage, data from the qualitative and quantitative studies were used to identify the key attitudes and behaviours associated with participation in screening. Then an information booklet was designed to present information on the screening programme addressing these key issues, using a range of techniques to induce attitude change research. Preliminary qualitative data were collected to assess reactions to the material, which resulted in minor modifications to the booklet. A small-scale quantitative study was used to assess acceptability and perceived impact on likelihood of attending. Finally, a larger-scale study is in progress in which 3,000 individuals who had expressed some doubts about their likelihood of attending, have been randomised to receive the information booklet or to the 'usual care' condition. Data are being collected on the effect on the intervention on both attitudes and attendance.

Communicating information to people about medication side effects

DC BERRY, IC MICHAS & E BERSELLINI, Dept of Psychology, University of Reading
Three experiments investigated the effects of providing people with different types of information about their medicines on measures of satisfaction, perceived risk and intention to comply. In all experiments, people from the general population ($n=2083$) were given hypothetical scenarios about visiting a doctor, being diagnosed as having illness, and being prescribed a hypothetical medication, together with an explanation which focused on the side effects of the medication. The experiments examined which particular aspects of information about negative side effects (their number, severity or likelihood of occurrence) have the greatest effect on people's ratings of satisfaction, perceived risk, and intention to comply. They also investigated how information about side effects interacts with information about the severity of the illness for which the medication is being prescribed, the expected benefit of the medication, and the level of control over preventing or alleviating the side effects.

SYMPOSIUM. FAMILIAL CANCER: THE PSYCHOSOCIAL IMPLICATIONS OF BEING AT INCREASED RISK

Men's understanding of genetic cancer with particular reference to prostate and testicular disease

C MOYNIHAN, R HUDDART, R EELES, D DEARNALEY & A HORWICH, Academic Dept of Radiotherapy & Urology, Institute of Cancer Research, Sutton, Surrey
There is indication of family risk in prostate and testicular cancers but the impact of familial cancer risk on men has not been investigated. In this qualitative study, men's beliefs and understanding of genetic cancer and their needs in relation to screening have been explored. The study sample includes disease free relatives of prostate and testicular cancer patients who (a) are part of a high risk group; (b) have cancer but are not in a high risk group; (c) an age matched control group with no cancer in the close family. Men's knowledge does not necessarily follow Mendelian genetics, but has its own contextual rationality. While 'genetic/hereditary' disease and the environment are seen as major 'causes' of cancer, 'risk balancing' features in terms of prevention. Men are not aware of the consequences of genetic testing in terms of, for example, insurance prospects. Strength is

maintained in silence; cancer communication between families appears minimal.

Experiences of breast and ovarian cancer in the family and predictive genetic testing

C FOSTER, M WATSON, L BROOKS, G EVANS, R EELES, S ASHLEY & Steering Group of the Cancer Research Campaign National Study of the Psychosocial Impact of BRCA1/2 Testing. Dept of Psychological Medicine, Institute of Cancer Research, Sutton, Surrey
5-10 per cent of breast and ovarian cancer is estimated to be due to genetic predisposition. Two gene mutations (BRCA1 & BRCA2) put female carriers at a greatly increased risk of developing breast and/or ovarian cancer, particularly at a young age. Familial experiences of cancer may place great emotional burden on individuals and influence perceptions of risk and risk management behaviour. As predictive genetic testing becomes more widespread consideration of the psychosocial impact of such testing is essential. The current national study investigates the psychosocial impact of predictive testing for BRCA1 & BRCA2. Cancer worry, general mental health, risk perception, and risk management behaviour are assessed over 12 months. The qualitative element of the study explores in greater depth women's experiences pre and post test result. Pre-test data are presented where women describe their experiences of cancer in the family and their reasons for having the predictive test. Clinical dilemmas are discussed.

The psychological consequences of predictive genetic testing

S MICHIE, M BROADSTOCK & T MARTEAU, Psychology & Genetics Research Group, King's College, Thomas Guy House, London
The psychological consequences of predictive genetic testing were investigated by (a) a systematic literature review and (b) an empirical study of testing for familial adenomatous polyposis (FAP). Systematic review: Five databases were searched for studies using standardised outcome measures and statistical comparison of groups. Fifteen of 899 papers met the selection criteria. Distress after testing was not predicted by test result, but was predicted by pre-test emotional state in 15 of 28 analyses. Empirical study: Although test result did not predict anxiety and depression, it did predict perceived stigma about the test result, which in turn predicted anxiety and depression. A model in which the relationship between test result and psychological outcome is moderated by optimism and background distress will be presented. These results suggest that testing protocols should include a pre-test assessment of emotional state so that post-test counselling can be targeted at those more distressed before testing.

Psychosocial implications of prophylactic bilateral mastectomy

MB HATCHER, LJ FALLOWFIELD, K THIRLAWAY & A HALL, CRC Psychosocial Oncology Group, Dept of Oncology, University College London
With the numbers of women contemplating prophylactic bilateral mastectomy increasing it is important that the psychological costs and benefits of this surgery are established. To date we have interviewed 78 women who have opted for surgery and 63 who have declined. Interim analysis shows that a greater percentage of women opting for surgery felt it was inevitable that they would develop the disease. Analysis of the General Health Questionnaire has shown that women who choose surgery are also more distressed than those who select regular surveillance. A factor that appears to be strongly associated with decision making is personal family history and experience of breast cancer.

Other issues that have emerged include concerns about insufficient information, lack of funding, isolation and post-operative complications.

SYMPOSIUM. PSYCHOLOGICAL FACTORS IN RECOVERY FROM MYOCARDIAL INFARCTION (MI)

Attendance at cardiac rehabilitation: The predictive value of the theory of planned behaviour

M JOHNSTON, L EARLL, B POLLARD, M GILES & DW JOHNSTON, School of Psychology, University of St Andrews & Gloucestershire Royal Hospital
Take-up rates for cardiac rehabilitation can be poor. The studies described here examine the predictive value of the TPB. The second study also examines the effectiveness of a brief intervention aimed at bridging the intention-behaviour gap, following the paradigm introduced by Orbell, Sheeran *et al.* Study 1: Examined behavioural intention (BI) and perceived behavioural control (PBC) regarding engagement in exercise in a group of 502 patients following a first episode of MI or angina pectoris. Using regression analyses, results show that PBC predicts attendance at cardiac rehabilitation. Study 2: Asked 200 patients to rate BI and PBC for attendance at cardiac rehabilitation and subsequent attendance was assessed. In addition, patients were randomly allocated to two groups: one group completed no further measures and the other questions requiring planning relevant to attendance at cardiac rehabilitation. Results will test both the predictive value of the TPB and the effects of the intervention.

Spouses' perceptions of their partner's myocardial infarction and their role in the recovery process

MJ FIGUEIRAS & J WEINMAN, ISCCS Portugal & GKT Medical School, London
This study examined the nature and possible influence of spouses' perceptions of their partners' MI, using Leventhal's self-regulatory model. Illness perceptions of 70 Portuguese spouses were assessed on an amended IPQ at 3 months after MI and patient outcomes were assessed at 6 and 12 months post-MI. Patients whose spouses had a higher level of education, a lower identity score and a more positive view of the consequences of MI reported better psychological functioning, lower health distress, less impact of MI in social and recreational activities and better sexual functioning in the recovery period. Also, patient's whose partners had a stronger belief in control/cure were more likely to make positive changes in diet. This study highlights the role of the spouse's beliefs in predicting patient's recovery and the implications of these results for post-MI interventions will be discussed.

Patients beliefs about medicines predict adherence to treatment following first myocardial infarction (MI)

R HORNE, D JAMES, J WEINMAN & R VINCENT, Dept of Pharmacy, University of Brighton.
This was a prospective longitudinal study of 68 first-time MI patients. Medication adherence was assessed at 3, 6 and 12 months post-MI by self report and prescription redemption records. A validated questionnaire was used to assess patients' initial orientation to medicines in general and their subsequent beliefs about the necessity of their prescribed medication and concerns about taking it at each follow-up. Patients who started out with a more negative orientation towards medicines as a whole were significantly more likely to report lower adherence to aspirin ($\rho=0.43$; $p < 0.01$) and were less adherent to other medicines prescribed for secondary prevention ($t=2.45$; $p < 0.05$) at the 3 month follow-up. Low adherence was also related to

concerns about long-term effects and dependence ($t=2.44$; $p < 0.05$). Concerns about cardiac medication were significantly reduced by the 6-month follow-up ($t=3.08$; $p < 0.01$). However, patients who retained stronger concerns at 6 months were significantly less adherent at 12-months ($t=2.11$; $p < 0.05$). Adherence to medication was unrelated to socio-demographic or clinical variables.

PTSD and myocardial infarction: Some correlates and predictors

P BENNETT, M CONWAY, S BROOKS & J CLATWORTHY, Dept of Experimental Psychology, University of Bristol

Two studies are reported focusing on factors associated with PTSD in myocardial infarction patients. In the first, associations between PTSD symptoms, negative affect, alexithymia and social support were measured in a cohort of 69 patients between six and twelve months following MI. Depending on the measure of PTSD, up to 60 per cent of the variance in symptoms was explained by psychological measures. In the second study, a cohort of 70 MI patients was followed for three months following their MI. Measures of threat appraisal and emotional response at the time of the MI were strongly predictive of subsequent symptoms. A measure of fear experienced during the event, for example explained 41 per cent in the variance in intrusive thoughts about the MI three months subsequently. The implications of these results are discussed.

Montreal heart attack readjustment trial (M-Hart): Overall results

N FRASURE-SMITH, F LESPÉANCE, RH PRINCE, P VERRIER, M JUNEAU & MG BOURASSA, McGill University, Montreal, Canada.

Research has linked psychological distress with poor prognosis following MI. M-HART was a randomized controlled trial of a one-year programme attempting to alter this risk. Between 1991 and 1994, 1376 patients (473 women), aged 27 to 87, were randomized to treatment (T; $n=692$) or usual care (C; $n=684$). T patients were phoned monthly to assess distress; distressed patients received home nursing visits. Over the year, three-quarters had elevated distress on at least one call and received an average of six one-hour home visits. Interventions were individually tailored to sources of distress and involved education, support and referral. Study nurses had experience in cardiac care and were supervised by psychiatrists. There were 65 deaths during the year including 56 cardiac deaths. T and C groups were balanced on measures of cardiac disease severity and demographic factors. Cumulative survival was compared using Cox proportional hazards regression. There was no overall treatment impact on cardiac deaths (Hazards Ratio for T (HR)=1.43; 95 per cent CI=0.84 - 2.43; $p=.19$), and no impact among men (HR=0.97; CI=0.42 - 2.23; $p=.94$). Among women, T pts had a marginally higher rate of cardiac death (HR=1.92; CI=0.95 - 3.88; $p=.069$). Control for Killip class, age, left ejection fraction and beta-blockade did not alter results. T-related changes in anxiety/depression scores among survivors were small. In the context of current post-MI treatment, there is little evidence that monthly phone monitoring combined with nursing visits for distressed patients improves anxiety, depression or one-year post-MI survival.

SYMPOSIUM. PSYCHOLOGICAL STRESS AND ILL-HEALTH IN THE WORKPLACE

Evaluation of organisational interventions for managing work-related stress: A case study

CA BARLOW, TR COX, AJ GRIFFITHS & RJ RANDALL, Centre for Organisational Health and Development, Dept of Psychology, University of Nottingham

The paper describes the evaluation of organisational interventions for the reduction of work-related stress, based upon the risk management paradigm (Griffiths *et al.* 1996), amongst employees from a large retail organisation in the South of England. The risk management approach consists of four broad phases: assessment, translation, implementation and evaluation. The assessment was carried out by a variety of means, including self-report, which questioned employees on the adequacy of their working conditions, their general well-being, and individual and organisational behaviours. The findings from the assessment were translated into a programme of organisational interventions to target the risks identified. Evaluation of the interventions explored employees' awareness of, and reactions to the interventions, and assessed changes in key variables. Overall, employees' awareness of the interventions was high, with positive responses to the interventions. Specific effects were evident for a number of the interventions. The authors would argue that the findings were encouraging given the turbulent climate of continual change in which the study was carried out, and lends support for the risk management approach to work-related stress.

Psychological ill health and associated sickness absence in NHS staff: A systematic literature review

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This systematic literature review, using the Cochrane method, identified 80 studies of psychological ill health and associated sickness absence amongst NHS staff, associations with work factors and workplace interventions designed to improve psychological health and reduce sickness absence. High levels of ill health were found, associated with work overload, long hours and the effects of these on personal lives; lack of control over work; lack of participation in decision making; poor social support and unclear management and work role, giving support to Karasek's demand-control model of work-related strain. Sickness absence was associated with poor management style and psychological ill health. The six methodologically acceptable intervention studies were of training and organisational approaches to increase participation in decision making and problem solving, increase support and feedback and improve communication. Only one was from the UK, revealing an important gap. Interventions aimed at increasing staff health should be evaluated across the NHS.

Occupational health and coping strategies among police officers

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This study had two aims: (1) to estimate the extent of self-reported work-related stress among police officers and the factors associated with it; and (2) to identify coping strategies associated with negative work outcomes such as job-induced stress, psychological well-being and propensity to leave. A questionnaire was sent out to 500 police officers. 307 completed

questionnaires were returned. The results showed that 25 per cent of police officers reported suffering from work-related stress. Of these, high levels of job-induced stress, sickness absence, and psychological ill health were reported. It was found that problem-focused coping strategies were more functional in terms of reducing job-induced stress, lowering propensity to leave and improving psychological well-being. Emotion-focused coping strategies were more dysfunctional in terms of increasing job-induced stress, psychological ill health and propensity to leave. These findings have implications for the way that stress management policies should focus on increasing problem-focused coping in an attempt to decrease occupational stress.

A study of workplace bullying in an NHS Community Trust

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The study reports findings from a questionnaire survey of 1,580 staff working in an NHS Community Trust. The aims of the study were to investigate the prevalence of workplace bullying, and to examine the association between bullying and occupational health outcomes. The measures included a 20-item inventory of bullying behaviours designed for the study, and measures of job-induced stress, job satisfaction, propensity to leave, anxiety, and depression. The study found high rates of bullying. Staff who had been bullied had significantly lower levels of job satisfaction and higher levels of job-induced stress, propensity to leave, anxiety, and depression. Support at work was able to act as a moderator, buffering individuals from the damaging effects of bullying. We conclude that bullying is a serious problem. Setting up systems for supporting staff and for dealing with interpersonal conflict may have benefits for both employers and staff.

SYMPOSIUM. CHANGING HEALTH PROFESSIONAL PRACTICE: WHAT CAN HEALTH PSYCHOLOGY RESEARCH CONTRIBUTE?

Towards evidence-based medical practice: Do cognitions predict compliance?

A WALKER, J GRIMSHAW, E ARMSTRONG, M JOHNSTON & C ABRAHAM, Health Services Research Unit, University of Aberdeen

Inappropriate variation in the delivery of care is a major concern for health services. However, whilst patient adherence is a major topic of interest in health psychology, the compliance of health care professionals with evidence based advice has received little attention. This paper considers the value of social cognition models in understanding the compliance of doctors with evidence based practice recommendations. It will draw on findings from two studies using the theory of planned behaviour. The first investigated the factors associated with intentions to prescribe heparin to prevent deep vein thrombosis among junior hospital doctors ($n=54$). The second investigated antibiotic prescribing for otherwise healthy patients presenting to their GP with a sore throat ($n=130$). These studies support previous findings, which suggest that the extent of job control may be an important mediator of relationships between cognitions and compliance. In this case, attitudes towards the evidence based practice were more likely to predict the intentions of GPs who have relatively high levels of job control, whilst perceived behavioural control was more important for the junior doctors. The implications of this for interventions to promote evidence based practice will be discussed.

Policies, plans and individual behaviour change in the implementation of evidence-based practice

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This paper draws on findings from two studies funded by NHS R&D programmes. In one, staff of 20 maternity units around the UK were interviewed about their knowledge, attitudes and behaviour with respect to five evidence based practice recommendations. Following the work of Gollwitzer (1993) on implementation intentions, particular emphasis was placed on establishing the precise nature of any plans for arriving at a unit policy, and then turning policy into practice. Findings of this study to date suggest awareness and general support for the principles of evidence based practice, sizeable gaps in understanding regarding the nature of the evidence base, wide variation in attitudes towards the specific recommendations, and in many centres a conspicuous absence of planning to achieve behaviour change. In the above study, variation in practice between staff working in the same unit was very common. The second study to be reported, again in the maternity area, was conducted in 98 general practices around England and Wales. Once again, variation in behaviour between different GPs working in the same practice was the rule rather than the exception. The clinical effectiveness agenda needs to include the question of what is the right 'unit of analysis' for intervention programmes. In health care, should we target hospitals, depts or individuals? The advent of clinical governance will make these questions much more pressing.

When the buck stops here: Perspectives from the top of health authorities and trusts in the West Midlands on clinical governance and evidence-based medicine

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This paper describes an action research study using the organisational change framework developed by Prochaska and Prochaska (1998). The study was designed to establish the awareness of leaders of trusts and health authorities in the West Midlands region of evidence based medicine and then emerging clinical governance policy of the NHS Executive. Interviews were conducted with chief executives of all acute, specialist and community trusts in the region (n=30), chief executives of all the health authorities in the region (n=13) and chairs of most health authorities (n=12). Most trust chief executives under-estimated the tasks ahead, had little awareness of the concepts or sources of information, and tended to delegate the clinical management of quality to senior clinical staff. The health authority chief executives had similar levels of knowledge, but had done less in their organisations to lead policy development. Chairs tended to over-estimate progress and underestimate the tasks ahead. Stage based interventions are suggested from these results, and a new region wide intervention and evaluation will be described.

Resistance to change: Reviewing the reasons health professionals may favour the status quo

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Initiatives to bring about better quality through the application of evidence are a feature to the drive towards cost-effectiveness in modern health services. To do this successfully necessitates behavioural change on the part of staff, and where this change fails to occur promptly or successfully the obstacle is often labelled 'resistance'. This paper uses clinical, organisational, social and health psychology to

consider the causes of resistance in this field: the difficulties of communication, the relevance of beliefs, the influence of group processes and stress, the psychology of clinical decision-making, etc. It goes on to consider strategies to deal with resistance: taking it as a message, looking for the gatekeepers of information, using teams and decision-making tools, working collaboratively, providing the right rewards, tackling stress, building in maintenance checks, etc. It will illustrate some points with evidence from a regional survey of clinical effectiveness in Trusts, and a recent survey of professional development of clinical governance.

ORAL PRESENTATIONS

Thalassaemia carrier testing: Information transfer and predictors of behaviour

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Purpose: To describe the quality of Beta-thalassaemia knowledge in a sample of Pakistani adults, and assess the relationship between knowledge, perception of risk and attitudes with uptake of thalassaemia carrier testing. **Method:** Cross-sectional design using semi-structured interviews in a sample of 59 Pakistani adults; measures included: knowledge of thalassaemia and inheritance; perception of risk; attitudes to thalassaemia testing, and attendance for carrier testing.

Results: Specific knowledge of thalassaemia, genetics and inheritance was poor; perception of risk was associated with uptake of carrier testing; and, knowledge was associated with perception of risk.

Conclusion: The main predictor of attendance for carrier testing was perception of risk. Perception of risk was associated with knowledge of thalassaemia, which was poor in Pakistani adults. Interventions are needed to improve knowledge about inheritance and this population's susceptibility to thalassaemia.

Cognitive predictors of ethnic minorities' intention to donate blood

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Aim: The aim of the study was to investigate the intention to donate blood among ethnic minorities using a model based on the Theory of Planned Behaviour (TPB). **Method:** The design was cross-sectional. Questionnaires were administered to 160 higher education students who were selected on the basis of observable characteristics of ethnicity. Participants completed a questionnaire which assessed the constructs contained in the TPB, in addition to new constructs Ethnic Group Identification (EGI) and In-group Altruism (IGA).

Results: Analysis of variance indicated that ethnic minorities identified more with their own ethnic groups and showed greater altruism for their ethnic group than Caucasians. Perceived behavioural control and attitude were the best predictors of intention, and EGI was predictive of IGA.

Conclusion: These results suggest that although IGA and behavioural norms were poor predictors of intention, attitude and perceived behavioural control remain strong predictors.

Response latency and stereotypical responses to the Menstrual Distress Questionnaire

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The Menstrual Distress Questionnaire (MDQ) has been widely employed as a measure of the premenstrual syndrome (PMS), but has been criticised for eliciting stereotypical responses (e.g. Parlee, 1974). The aim of the present study was to further examine premenstrual and intermenstrual stereotypical responses to the MDQ. A

computerised version of the MDQ was completed by both men (n=16) and women (n=16) in relation to the premenstrual and intermenstrual phases of the cycle. The computerised MDQ measured response latency in order to assess the accessibility of relevant cognitions. In general males and females gave similar ratings of intermenstrual symptoms. However, males rated premenstrual symptoms more severely than females. An interaction on three sub-scales indicated that males responded faster than females for premenstrual ratings, but slower or equally fast for intermenstrual ratings. The stereotyping of PMS is discussed along with the implications for the future measurement of PMS.

Reducing fat intake: Efficacy of a large-scale intervention based on the theory of planned behaviour

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The present study reports data from a large-scale theory of planned behaviour-based intervention designed to reduce fat consumption in hospital workers (n=800). Participants were randomised into three intervention conditions: information, attitude change, and self-efficacy enhancement. Controlling for initial fat intake, the interventions significantly reduced proportion of fat intake by 1.38 per cent in high-fat consumers (i.e. those consuming above government recommended levels). Contrary to predictions, there were no differences between interventions, and these effects were unmediated by theory of planned behaviour variables. However, from a public health perspective, a one per cent reduction in the proportion of calories derived from fat would save 10,000 deaths per year in the US, indicating the potential of the materials developed in the present study. The discussion will focus on the tailoring of interventions to subgroups, and on future research into theory-based interventions.

The psycho-social impact of breast cancer related lymphoedema: A focus group study

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The psychological and social effects of breast cancer have been well documented. Until recently, however, little attention has been paid to the psycho-social impact of certain treatment side-effects, for example, lymphoedema. Lymphoedema has been reported to occur in 11-31 per cent of women following surgery for breast cancer. This chronic condition is disfiguring and often painful and disabling. In order to investigate these effects, three focus groups, each of 5/6 women were held to gather information on women's experiences of lymphoedema. The focus groups were chosen to include women in their 40s, 50s and 60s. The results revealed several areas of concern for lymphoedema sufferers, spanning four quality of life domains; physical, psychological, social and spiritual, and emphasised the interacting effects of physical and social issues on the overall psychological well-being of these women. These findings highlight the role of psychological issues which should be addressed in future provision.

Psychological aspects of toe to hand transfer in children – comparisons of views of children and their parents

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Thirty-seven children with congenital (86 per cent) or post-traumatic (14 per cent) hand anomalies underwent unilateral or bilateral toe to hand transfers. All had undergone pre-operative counselling. After rehabilitation and more than one year after surgery, the children and their parents were reviewed by a clinical psychologist to assess the psychosocial outcome of the surgery. A high level of satisfaction was reported with regard to the surgery, in terms of function, cosmesis, donor

site, the reactions of others and psychosocial well-being. This was true regardless of the gender or the age of the child. However, there was a tendency for the children to be more positive in their responses than their parents. The results of the study have been used to inform clinical practice and to aid new families in the difficult and complex process of pre-operative decision making.

Why do some women delay seeking medical help for breast cancer symptoms?

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Aim: To understand factors which influence women's decisions to seek help for breast cancer symptoms.

Methods: Tape recorded semi-structured interviews with breast cancer patients were conducted focusing on thoughts, feelings and behaviour in response to breast symptom discovery. The interviews with 31 patients who had delayed > 12 weeks and 15 who had presented within 2 weeks to their general practitioner were transcribed and analysed using systematic qualitative methods. Results: Recurrent themes in the accounts of those who did not seek help immediately concerned difficulties in identifying the breast symptom as serious, attitudes toward GP attendance and negative beliefs about the consequences of help-seeking. Those who presented quickly to the GP expressed fewer doubts about the appropriateness of seeking medical care.

Conclusions: These are discussed within the framework of Leventhal's self-regulation model. Women may need more information about the different types of presenting symptoms of breast cancer and more information and reassurance about the consequences of seeking medical help.

The self-regulatory model: A framework for chronic illness?

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Leventhal's self-regulatory model was used as the framework for exploring the relationship between patients' illness perceptions, coping and functioning for two chronic illnesses: diabetes and hypertension. The illness perception questionnaire (IPQ), short-form COPE, SF-36 and a self-management questionnaire were completed by 186 diabetic and 176 hypertensive patients. A series of regression analyses indicated that illness perceptions were significant predictors of psychological and physical functioning for both diabetic and hypertensive patients. Perceptions of a strong illness identity and serious consequences demonstrated the strongest relationship with functioning and were also associated with emotion-focused and disengagement coping strategies. Consistent with previous research, these traditionally maladaptive strategies were more important in predicting functioning than problem-focused strategies. Adherence however, was more strongly associated with beliefs concerning the costs and benefits of treatment, suggesting that the incorporation of additional constructs to the original model are important when considering decisions about treatment.

Gender differences in delay time and adaptation following first-time MI

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Coronary Heart Disease (CHD) is one of the major causes of mortality and morbidity in the western world. A potential endpoint of CHD is Myocardial Infarction (MI). Although life threatening, mortality rates are reduced by quick access to medical treatment. Despite high rates of CHD among women, research has generally focused on men. This research aimed to

compare males and females on their delay time following onset of the MI, the factors influencing delay, and their subsequent adaptation to Cardiac Rehabilitation. Twenty-five men and 25 women who had suffered a first-time acute MI were included in this study. Participants completed a number of assessments, including measures of anxiety and depression. In addition a semi-structured interview was conducted to elicit information related to delay time between symptom onset and the contacting of medical services, and questions were asked about the participants beliefs about their condition, which were based upon Leventhal's model of illness representations. Results showed that women were significantly less likely to delay in contacting medical services although they had less accurate beliefs regarding the causes and consequences of MI's. Both men and women held inaccurate beliefs about the expected duration of the condition. The clinical implications of these findings are discussed.

Doing being positive: A discursive analysis of talk about cancer

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Cancer is a mysterious and frightening disease and talking about it can be problematic for participants. Narratives about diagnosis, the clinical setting, indignities of treatment and its side effects are recurrent topics in talk about cancer. Additionally, the word cancer is surrounded by prescriptive discourses including 'being positive' and 'adopting a fighting spirit' which places the person with cancer in a position of being accountable for the way they manage their illness. Transcribed interviews conducted with people given a cancer diagnosis are analysed using a discursive approach, which treats discourse as a performative domain of social action (Edwards & Potter, 1992). This paper focuses on how people talk about frightening and sensitive issues surrounding their illness and how participants manage and discursively accomplish 'being positive'. In particular, emphasis is placed on how participants orient to the implications of being positive about their illness as being a potentially accountable issue.

Telling it as it is! Women's perceptions of their psychological needs during breast cancer diagnosis and treatment

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Purpose of the study: This study investigated how women perceive their psychological needs during breast cancer diagnosis and treatment.

Method: The methodological design consisted of the concurrent collection and analysis of qualitative data using a grounded theory approach (Strauss & Corbin 1990). Data was collected through guided interviews with a sample of twenty women who were three days post-operative having undergone a mastectomy for breast cancer.

Results: A theory grounded in the women's descriptions of their experience was developed. This indicated a number of psychological issues, for example: That they search for a cause or reason for having developed cancer through self-blame or external causality. Often these beliefs are in conflict with medical information causing tension to occur. That they have lost control over their daily life, body and social world, which evokes a range of emotional reactions and adjustment problems. Implications: These findings and others (outlined in the study) clearly indicate the need for psychosocial intervention in the care of women with breast cancer.

The importance of support systems for couples in the aftermath of miscarriage

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This paper gives the final results of a prospective study carried out with 39 couples examining the

experience of miscarriage and the role of support systems in the aftermath of such an event. Questionnaires were given to couples during hospitalisation for miscarriage and again two to three months later. Support from professionals was not always perceived as being adequate, particularly by partners. Women were more likely to rate support from friends and/or relatives as helpful while partners were more likely to be ambivalent, reflecting previous observations that society expects men to be strong and suppress their emotions. The importance of information provision by health professionals was continually emphasised. When it came to friends, relatives and members of the wider community, recognition of the significance of the event and an understanding of the legitimacy of their feelings was required. Implications for intervention will be discussed, including the need for increased emphasis on the partner's reaction.

What can children tell us about their experiences of pain, and how?

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An opportunity sample of 24 children aged between 5 and 16 was recruited from Paediatric Rheumatology (persistent pain group, n=12) and Paediatric Orthopaedics (acute pain group, n=12). Measures derived from the PPQ (Varni & Thompson 1985) and APPT (Savdra *et al.*, 1993) were used in conjunction with a semi-structured interview to explore the children's pain experiences, thus combining both supplied and generated response formats. The aim of the study was to collect pain descriptors in a variety of formats in order to explore similarities and differences in the way children with acute and persistent pain express their experiences. The study is one of a series of exploratory investigations which have the common aim of developing sensitive, reliable pain scales for children. The children in this study generated verbal descriptors, chose words from a list, completed a VAS and drew their pain on a body outline, selecting colours to represent different intensities.

Results: Both generated and selected verbal descriptors showed differences between the groups. Children with persistent pain also generated more descriptions of their pain than children with acute pain. There are differences in intensity ratings between the groups. Children in each group selected different colours to demonstrate different types of pain, but used them in a similar fashion to show intensity. The results are discussed in relation to the need for specificity and sensitivity in children's pain measures.

Health psychology and genetically modified food

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The introduction of genetically modified food into our diet has attracted considerable public opposition. This paper aims to develop a theoretical framework for teasing out psychological processes underpinning public resistance and to explore the psychological implications for consumers of the failure to take the resistance seriously. The paper will start from an analysis of a dilemma. Specifically, modern ideals of individualism mean that healthy eating is increasingly seen to be about lifestyle choice and personal responsibility. Yet other social changes mean consumers are relying more on convenience foods while becoming distanced from food production. Consumers are therefore faced with a problem – how to make informed decisions on health consequences of something over which they have decreasing control. In examining the psychological meaning of current opposition to GM foods in the light of this dilemma, the current paper will reflect on a number of implications for food safety policy.

Dieting, depression and the menstrual cycle

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Dieting is increasingly common in young women. Many women who do not diet exercise high levels of dietary restraint. The regular hormonal fluctuations of the menstrual cycle may make dietary restraint more difficult to maintain, particularly premenstrually. Mood and depressive symptoms may increase in the premenstrual phase of the cycle. This study examines interaction of these three factors in a sample of 635 women, randomly selected from General Practitioner Registers. Each participant completed a detailed questionnaire about their eating behaviour (Dutch Eating Behaviour Questionnaire), food intake and menstrual cycle symptoms (modified Menstrual Distress Questionnaire). Almost half the sample indicated that they suffered from PMS ($n=316$) and 25 per cent were currently dieting. Multivariate analysis revealed that women with premenstrual mood change reported higher levels of dietary restraint, emotional and external eating. High dietary restraint interacted with premenstrual mood to exacerbate menstrual cycle symptoms relating to weight gain, water retention and food craving. Food craving was most severe premenstrually across the sample but levels of reporting were highest in the highly restrained. The implications for women's management of menstrual cycle symptoms, weight and appetite control are discussed.

A longitudinal study of intentions for exercise in a community sample

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Recent research on intention within social cognition models has focused on specific plans for health behaviour (Orbell *et al.*, 1998). Thus a contrast has been drawn between general goal intentions and specific plans, termed implementation intentions. Implementation intentions contain the 'what', 'where', 'how' and 'when' of the behaviour, i.e. the means whereby generalised intentions might be realised. This study assessed the contribution of implementation intentions to exercise behaviour within a community sample. Participants ($n=946$), recruited at random from the patient lists of four GP practices, completed standardised measures of the Transtheoretical Model, barriers to exercise and the Theory of Planned Behaviour, with 530 returning the questionnaire 6 months later. To measure implementation intentions, participants answered questions about 'what', 'where', 'when', 'how often' and 'with whom' they would exercise. Responses were coded for the specificity of the intentions. Cross-sectional analyses revealed an increase in the specificity of intentions as one moved from pre-contemplation to action (all $p < .001$) consistent with a central role for current behaviour in the formation of these intentions. Longitudinal analyses were restricted to those participants who intended to exercise in the future. These analyses revealed that implementation intentions accounted for up to 10 per cent of the variance over and above that predicted by general goal intentions. Discussion will focus on the role of intention in the prediction of exercise behaviour.

Medical errors: Their frequency, management and association with job stress

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This paper explores the extent of medical errors made by senior house officers (SHOs): the kinds of errors; their management of such errors (in terms of attribution and social support); and their current experience of job stress (in terms of burnout and job satisfaction). Seventy-eight SHOs from two London teaching hospitals responded to a self-report questionnaire survey. A quantitative mixed subjects design was used. The majority of SHOs made two to four errors during their career. Key findings suggest the amount of errors made were

negatively related to job stress; SHOs who made controllable attributions for the causes of their errors experienced higher forms of job stress. SHOs with some higher forms of job stress reported difficulty seeking support at work about their error.

Eliciting causal beliefs about heart attacks: A comparison of implicit and explicit methods

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Objective: To compare causal beliefs about heart attacks elicited by (a) a questionnaire (explicit) and (b) a vignette task (implicit).

Methods: 107 men and women completed two tasks: (a) a questionnaire where they explicitly rated the importance of a number of causes of heart attacks, and (b) a vignette where they implicitly used risk factor information (concerning smoking, family history and stress) to estimate a hypothetical man's likelihood of a heart attack.

Results: With the explicit task, family history was seen as significantly less important than smoking or stress; in the implicit task, smoking and family history exerted a greater influence on estimates of risk than did stress. A replication study, which included a manipulation check, confirmed the results.

Discussion: Two types of thinking processes, implicit and explicit, may be operating, with differential access to these provided by the two tasks, and possibly with differential links to behaviour.

Breast cancer patients' recall of doctor's diagnosis informing-style as correlates of post-traumatic stress symptoms and hopelessness levels

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Phenomenologically, cancer may 'begin' when patients are informed about their diagnosis. We examined the relations between informing-style and post-traumatic stress disorder (PTSD) symptoms and hopelessness. Fifty-one women with breast-cancer reported their recall of their doctor's diagnosis informing-style, life-changes, negative-affectivity (NA), PTSD and hopelessness. After controlling statistically for time since diagnosis, age and life-changes, levels of recalled caring informing-style were negatively correlated with PTSD-symptoms ($r = -.31$, $p < .05$), particularly with intrusions ($r = -.37$, $p < .05$). Informing-style was not correlated with hopelessness, but PTSD-symptoms were correlated with hopelessness ($r = .37$, $p < .01$). Finally, the correlations between informing-style and PTSD-symptoms disappeared after controlling for NA (a 'recall-bias index'). Doctors informing a diagnosis of cancer in a caring manner may have patients with lower PTSD-symptoms, which are associated with lower hopelessness levels. These findings have implications for teaching doctor-patient communication-skills. Replication using a prospective design is recommended.

Salient beliefs, referents, barriers and cognitive representations of illness in women attending a colposcopy clinic: Pilot interviews

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Few studies have examined the predictors of follow-up colposcopy examinations. This pilot study aimed to elicit the salient beliefs, referents and representations of the disease amongst women attending colposcopy examination. Forty-nine women (mean age 35.2+10.3 years) participated in a structured interview devised according to guidelines presented by Ajzen and Fishbein (1980) and Orbell *et al.* (1998). The interview was designed to elicit salient beliefs, referents and cognitive representations of illness in terms of disease

identity, causes, consequences, timescale and control. 'Receiving treatment' and 'having piece of mind' and 'receiving a diagnosis' were the most frequently reported advantages of attending the clinic while the 'humiliating' and 'uncomfortable' experience of the examination itself were the most frequently reported negative beliefs. Partners, parents and friends were most frequently listed as salient referents that would encourage attendance to the clinic. Having to take time off work, the need to find childcare and lack of transport to the clinic were the most frequently reported barriers to attendance. The majority of participants listed having 'abnormal cells' as the main problem with their cervix. However, few women could identify a possible cause for the condition. Most participants said they thought their cervical abnormality would get better as long as they had treatment. Considerable uncertainty was apparent concerning the likely timeline associated with treatment. In addition, many women stated that they thought the cells might turn cancerous if it were left untreated.

Does cognitive function influence quality of life following coronary artery bypass graft (CABG) surgery?

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Study purpose: To determine the impact of cognitive decline upon quality of life (QOL) and independent functioning following CABG surgery.

Method: Thirty-five primary CABG patients were recruited from waiting lists and assessed one week prior to surgery and two months following surgery. Patients were administered a comprehensive protocol reflecting memory, attention and manual dexterity function. Self-report measures of QOL were administered following the protocol; Sickness Impact Profile and the MOS Short-Form 36.

Results: Thirty-one per cent of CABG patients demonstrated significant post-operative cognitive deficits. Physical, emotional and social QOL were significantly improved following surgery. Pre-operative manual dexterity and attention predicted post-operative physical impairments and pre-operative memory predicted post-operative emotional adjustment.

Implications: It is important to quantify the impact of cognitive function upon QOL otherwise the success of CABG surgery maybe measured in terms of revascularisation alone. Furthermore, more efficient management of NHS treatments could mean a significant reduction for future NHS costs.

Gender blindness, resistance and power: A qualitative study of surgical teams

C HEALY & P NICOLSON, ScHARR, Regent Court, University of Sheffield

Health professionals are suffering stress and low morale in their working lives. There is evidence that women are more stressed than men particularly if they are in senior professional or managerial positions. It is unclear exactly why that is the case, particularly when most women professionals deny that gender *per se* is an issue. This study comprised 30 in-depth interviews with female and male nurses and doctors of all grades working in surgical teams in four hospitals. The interviews focused on perceptions of working together in multi-disciplinary teams, gender relations, their evaluation of organisational communications and the competence of their colleagues. Results showed that almost all respondents denied that gender made a difference to their aspirations and experience of work although the content of the interviews indicate that the picture was more complex. Women and men discussed different issues in relation to stress, competence and aspirations.

Nurses at work – an investigation of the planning activities of learner and trained nurses

C HENDRY, A WALKER & M SWANSTON, School of Nursing and Midwifery, University of Dundee, and School of Social & Health Sciences, University of Abertay, Dundee. Setting priorities in caring for patients is regarded as a key skill for professional and competent practice. Earlier work compared this skill in learner and trained nurses using simulation methods, and simulation combined with think aloud. A main constraint in such approaches is the extent to which they fail to represent the 'real world' of practice. This paper reports on work undertaken to investigate care planning with specific emphasis on priority setting as it occurs in clinical practice, using think aloud method, observation and semi-structured interview. Key findings include differences in cognitive approach setting and planning, medical diagnosis being seen as not significant, and role specific influences on priority setting. The paper will also consider the problems inherent in conducting research in an unpredictable and dynamic environment such as a hospital ward.

Patients' interpretation of symptom as a source of delay to reach hospital in acute myocardial infarction (MI)

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Aim: To test the hypothesis that, patients' experience and interpretation of the symptoms of acute myocardial infarction (MI) is a significant source of delay in referral to hospital. Method: 88 first MI patients were interviewed during convalescence on the hospital ward to assess their recall of the type and severity of symptoms experienced during the acute event and the degree to which these matched their expectations of what a heart attack would be like. **Results:** Most patients (87 per cent) had a clear 'prototype' of what symptoms to expect when experiencing a heart attack. However the symptoms experienced did not match their prototype in 58 per cent of cases. Delay was found to be significantly higher for patients who did not experience chest pain ($t=1.7$, $df=86$, $p=0.04$) and for those whose symptoms did not match their prototype for a heart attack ($t=1.7$, $df=86$, $p=0.04$). **Conclusion:** Patients' experience and interpretation of symptoms was an important source of delay to arrival at hospital during acute MI.

'Before and after stories': Narrative identities and the management of personal accountability

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This paper takes a discursive psychology approach to the analysis of illness narratives, in which discourse is treated as a performative domain of social action (Edwards & Potter 1992). Extracts of data have been selected from a larger, ESRC funded, study on the discursive construction of ME (CFS). Stories of biographical disruption are common features of many kinds of illness narrative. For example, 'before and after' stories have been interpreted as evidence of 'loss of self' in tales of debilitating illness (Charmaz, 1983) whilst tales of 'frenetic lifestyles' before the onset of ME (CFS) have been treated as face value evidence to support 'opt-out' or 'burn-out' theories (Ware, 1992). Using discursive psychology as an alternative approach to analysis, I show how 'before and after' stories work to construct particular kinds of identities that are well designed to manage talk about the illness as a realm of moral accountability.

A randomised comparison of psychological (cognitive behavioural therapy [CBT]) vs medical (fluoxetine) treatment vs both (CBT plus fluoxetine) in the treatment of women with moderate to severe premenstrual symptoms (PMS)

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This paper describes the evaluation of three treatments (CBT, Fluoxetine, both) for women with moderate to severe PMS; CBT and Fluoxetine have been shown to be more effective than placebo in previous research. 108 women (intention to treat) were randomised into the three groups and 65 completed treatment. Quantitative assessments (COPE daily diaries, HADS, SF36) were carried out at baseline, 3, 6 and 9 months. CBT included 10 sessions over a 6-month period, based on Blake's cognitive approach (1993); Fluoxetine was given for 6 months. There was a 3-month follow-up period. Qualitative interviews were carried out at baseline and 6 months in order to assess the impact of treatments upon women's cognitive appraisals of PMS. All three treatments led to significant improvements on quantitative measures. However, differential effects were evident at 6 months post treatment and at follow-up. The relationships between outcome and changes in cognitive models of PMS will be presented.

A longitudinal study of stress-coping and male sub-fertility

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The stress-coping process mediates the stress response, and daily stressors are thought to have clear links to endocrine modulation. It is hypothesised that this biopsychological interface may play a contributing factor in certain forms of human male subfertility, via effects on the HPA and HPG axes. This study presents data from a 14 day longitudinal study of 50 males (27 fertile and 23 sub-fertile). Self-report measures of the frequency and severity of daily stressors, and the daily use of coping behaviours were collected from males attending a general infertility clinic. Fertile and sub-fertile males did not differ with respect to the Meaning of Parenthood (Edelmann *et al.*, 1994), general perceived stress, coping with unwanted childlessness or demographic variables. However, data showed differences between the daily stress-coping profiles of males with and without a male factor implicated in the aetiology of the couples' sub-fertility. The possible interaction of stress and coping with psychoneuroendocrinological factors in male sub-fertility are discussed.

Women's concerns about therapies offered during the menopause: A qualitative study

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The number of therapies aimed at women during the menopause has grown rapidly in the last ten years. Medical research offers women hormone replacement therapy (HRT) while complementary approaches vary from diets rich in phyto-estrogens, vitamins and minerals supplements to acupuncture and reflexology. The aim of this study was to explore women's beliefs and concerns about these therapies. Sixty-one women aged between 40 and 60 years took part in a series of focus groups and semi-structured interviews. Twenty-six of the women were currently taking HRT, 8 women were former users of HRT and 27 had never used HRT. Thirteen women had undergone some form of hysterectomy. Analysis of the transcripts using a grounded theory approach revealed that women described alternative/complementary methods as

the preferred option when experiencing problems during the menopause, and that health professionals were not consistent when advising on HRT.

Predicting health behaviours 12 months after a first myocardial infarction or angina pectoris from the theory of planned behaviour (TPB)

DW JOHNSTON, B POLLARD & M JOHNSTON, School of Psychology, University of St Andrews
We tested the power of Perceived Behaviour Control (PBC) and Intention to predict diet, exercise and smoking in 502 patients who have experienced a first MI or episode of angina pectoris. The predictive measures in this study were recorded before discharge, the outcome measures at 12 months. **Measures:** Predictive measures. Intention and PBC assessed by a rating scale for the behaviours being studied. Outcome measures: Diet was assessed by a composite score on a questionnaire reflecting a healthy diet. Exercise was assessed by the Godin self report questionnaire and fitness from the distance walked in six minutes. Participants were classified as smokers if they either said that they smoked at entry or had only stopped in the previous two weeks. Smoking cessation was confirmed by serum cotinine. **Results:** Linear, and logistic regression analyses and structural equation modelling were conducted. Diet at 12 months was predicted by PBC but dietary change was not. PBC also predicted exercise and fitness. Intention and PBC independently predicted smoking cessation.

The effectiveness of smoking cessation interventions during pregnancy: A meta-analysis

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Maternal smoking remains the greatest risk factor for adverse medical and obstetric outcomes in pregnancy and birth. Smoking has a direct effect on prematurity and low birth weight. This study aimed to assess the effectiveness of interventions and to characterise the most effective programmes. One previous meta-analysis of intervention effectiveness is available in this area (Dolan-Mullen *et al.*, 1994). The present study extended this research by including twice as many controlled evaluations ($n=36$). Results confirmed the overall effectiveness of interventions with a weighted mean difference of 4.8 per cent in quit rates in intervention type. Those using multiple methods, including self-help leaflets were more effective with one study reporting a 24 per cent quit rate difference between intervention and control groups. Use of follow-up also increased effectiveness. Randomised controlled trials and earlier studies reported larger effect sizes. No significant differences in effect size were observed when studies were grouped according to use of biochemical validation and period of assessment during pregnancy. In conclusion, smoking cessation interventions during pregnancy are effective but effectiveness depends critically on the type of intervention employed.

Social support duration of the post-natal hospital stay and maternal well-being

E KENYON & J HEWISON, School of Psychology, University of Leeds
The study investigated relationships between perceived social support ante-natally, duration of hospital stay (in hours) following birth and rates of psychological distress antenatally and post-natally. A self completion questionnaire, consisting of social support, anxiety and depression measures was given to 316 participants, between 24-36 weeks gestation at

routine ante-natal clinics in Leeds. Participants' length of stay was recorded and a postal questionnaire was sent 6 weeks post-natally. Analyses will test the hypotheses that (a) women who report less social support will stay a shorter time in hospital than women with high levels of support and (b) that women who report less social support ante-natally, will show higher rates of depression and anxiety in the last trimester of pregnancy and 6 weeks postnatally. The findings will contribute to improved understanding of the relationship between social support and psychological outcomes and may have implications for improving health care provision.

Cues to action in the environment: Who do posters prompt?

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Incidental physical activity, such as stair climbing, has been identified as an effective way to improve public health levels. Poster prompts at the point of choice between stairs and escalators have increased stair use (Anderson *et al.*, 1998, Blamey *et al.*, 1995, Brownall *et al.*, 1980). As yet, it is unknown whether such stimuli prompt active or inactive individuals to use the stairs. This paper assesses whether posters can cue sedentary individuals. Two studies will be reviewed. Data was collected over two-week baseline and intervention periods. During the first study shoppers responded to A3-sized prompts. 'Take a step in the right direction'. In the second study A1-sized posters 'Stay healthy, Save time, Use the stairs' were tested in a shopping centre, train station and worksite. In both studies, trained interviewers randomly questioned the shoppers about their stage of change, motivation, leisure-time exercise and habitual lifestyle physical activity. In study one, the posters prompted older individuals ($p=0.05$), less active individuals (estimated METS: $p=0.02$) and 'habitual' stairs users ($p=0.003$) to use the stairs. In study two there was a significant increase in stair use ($p=0.0001$). The interview data from study two are currently being analysed. Discussion will focus on who posters prompt and the context and specificity of the message.

Disagreement in patient and carer assessment of functional abilities after stroke

P KNAPP & J HEWISON, Division of Academic Pharmacy Practice, University of Leeds

The aims were to describe differences between functional ability assessments made by stroke patients and their informal carers, and to investigate the psychological associates of the difference in assessments. A prospective design was used, with repeated assessments of function, mood and carer strain. Thirty hospital stroke patients and their main carer were interviewed three times: (1) within 1 month of stroke; (2) one month post-discharge; (3) six months post-discharge. Patients' self-assessment was less disabled than carers' assessments at all three time-points ($p < .02$). The disagreement in assessment was unrelated to patient or carer mood but greater disagreement was associated with greater carer strain ($p < .05$). The source of the disagreement in functional ability assessment remains unclear. We conclude that the method of assessment affects the rating of functional abilities after stroke. Carer strain is potentially increased when the patient or carer makes an unrealistic assessment of the patient's level of independence.

Mortality at 12 months after stroke is predicted by depressive symptoms at 1 month

P KNAPP, A HOUSE, J BAMFORD & A VAIL, Division of Academic Pharmacy Practice, University of Leeds

The aim was to determine whether depression identified at 1 month after hospital admission for stroke, is a risk factor for mortality at 12 months. 448 patients were randomised at one month into a

trial of psychological therapy compared to volunteer visits and treatment-as-usual. Vital status of 446 patients was available at 12 months. Depressive symptoms were assessed by standardised psychiatric interview and the GHQ-28. Measures of disability and cognitive impairment were also taken. Logistic regression analysis showed that mortality was associated significantly with older age, lower cognitive score, and scoring on the D sub-scale ('severe depression') of the GHQ. Psychiatric disorder was not associated with increased mortality. Depressive symptoms on a self-report measure predict 12 month mortality after stroke, after adjustment for factors associated with stroke severity. The result is in keeping with other evidence that depressive symptoms increase risk of death in vascular disease. Possible mediating mechanisms were not sought in this study. Replication of the finding is needed.

Understanding the general practice consultation: Conversation analysis a new method for psychologists

M LANGDON, Dept of Public Health & Primary Care, University of Hull

Analysis of everyday interaction can shed light on taken-for-granted activities such as conversations. The general practice consultation is itself highly 'commonplace', yet important for its participants. This paper will introduce the Conversation Analysis (CA), methodology/approach to examining GP consultations. CA emerged from the ethnomethodology paradigm and seeks to find rules and patterns in naturally occurring conversations. CA is able to offer an informative examination of social interaction that will be of interest to psychologists. This paper will present examples of past and current research in order to demonstrate the CA approach to understanding general practice consultations. This will then be compared to the type of information ascertained via the more established method of Roter's Interaction Analysis System (RIAS). It is hoped that this comparison will highlight the richness and versatility of the CA methodology and demonstrate how health psychology might draw from some of the insights of Conversation Analysis.

Understanding high threat behaviour in the face of low risk information

T MARTEAU, S MICHIE & J MILLER, Psychology & Genetics Research Group, Thomas Guy House, London

Aim: To understand why half of those receiving a low risk result on genetic testing for an inherited form of bowel cancer expect future bowel screening, despite its clinical redundancy.

Method: Ninety-six individuals receiving a negative result completed a questionnaire after testing to assess illness and test representations, emotional state and behavioural expectations regarding bowel screening.

Results: There were no differences in emotional state or demographic characteristics between those expecting to attend for screening and those not. They differed however in several representations: those with high, compared with those with low expectations of attending perceived the likelihood and consequences of the disease to be greater, and felt more threatened and stigmatised by their results. They also perceived genetic tests as less accurate and bowel screening as more accurate.

Conclusion: Modifying illness and test representations may reduce unrealistic expectations of future screening.

Health status in older people, fear of crime, and psychosocial limitation

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This study explored relationships among health status, awareness and fear of crime, and psychosocial limitation in older people. Sixty older people were recruited via day centres, and

interviewed. Health status was measured by the Health Status Index, a battery of questions produced an index of awareness of crime, fear of crime was assessed using a catastrophizing technique, and the Functional Limitation Profile measured psychosocial limitation. Fear of property crime and fear of personal crime were both greater in people with high awareness of crime. However, health status moderated these relationships, as fear of property crime was greater in people with poor health, while fear of personal crime was greater in people with good health. Fear of crime was not associated with psychosocial limitation, which was significantly related to health status. These results are related to models of fear of crime, and implications of the findings for social policy are explored.

Attributions of blame in genetic counselling: Are they made and does it matter?

C METCALF, J HEWISON, A WALKER, RF MUELLER & H CUCKLE, School of Psychology, University of Leeds

Unresolved and inappropriate blame for health conditions can have long term psychological consequences. In the case of inherited disorders, the potential for parents and other family members to blame each other is high. An important function of genetic counselling in these circumstances is to address and allay this potential for blame. This paper reports preliminary findings from a national study involving ten regional genetics units in the UK and 90 episodes of genetic counselling. Disorders represented were 31 sex-linked cases (Duchenne muscular dystrophy and Fragile X syndrome), 30 recessive cases (cystic fibrosis) and 29 dominant cases (chromosomal rearrangements). Self-blame was evident in almost one third of cases (29/90). Those reporting self-blame (in questionnaires) did not necessarily raise it, or were invited to discuss it, during the session (from session transcripts). Psychological impact, in terms of anxiety levels, was greater in self-blame cases, especially where self-blame was present after the session.

How women cope following assessment of their genetic risk of developing breast cancer

M MORRALL, J HEWISON & G LATCHFORD, Division of Psychiatry & Behavioural Sciences & School of Psychology, University of Leeds

This research sought to understand how women cope following an assessment of their increased genetic risk of developing breast cancer. Leventhal's model of illness representations (IR) was used to assess how each participant represented and coped with their health threat. Participants were 34 women referred to a regional genetics service. The study was prospective, with participants being interviewed four to six weeks after their appointment with a genetic counsellor, then approximately three months later. Participants were given a number of instruments, including a modified illness perception questionnaire, the COPE, HADS, and Lerman's cancer worry scale. Results showed that anxiety about developing breast cancer decreased with time, and that components of the modified IPQ were significantly associated with scales of the COPE at both time-points. A series of regression analyses indicated that the 'less useful coping responses' component of the COPE and not representations of the genetic risk of developing breast cancer, as measured by the IPQ, explained a large degree of the variance in psychological well-being three months later.

The effect of autobiographical memory impairment on perceptions of quality of life (QoL) in persons with severe neurological disability

R MURRELL, PM KENEALY & JG BEAUMONT, School of Psychology, Roehampton Institute London, Whitelands College, London

Purpose: To examine whether autobiographical memory deficits affect QoL perceptions in persons with severe neurological disability.

Method: A factorial design was used. Twenty-four residents with a range of diagnoses from the Royal Hospital for Neuro-disability took part in QoL assessments using the SEIQoL-DW and QoL 'today' and 'generally' ratings. Autobiographical memory was assessed using the Autobiographical Memory Interview (AMI), and the presence/absence of current life changes was recorded.

Results: Individuals who were unable to remember recent autobiographical events obtained higher SEIQoL-DW scores than those without this deficit, but when life changes were reported those who could remember recent autobiographical events obtained higher SEIQoL-DW scores ($F(1, 22) = 9.33, p < 0.01$).

Conclusion: Autobiographical memory deficits may enhance or decrease QoL perceptions within the present population, depending on the presence/absence of life changes. Implications: It may be beneficial to monitor autobiographical memory functioning and life changes alongside future QoL assessments conducted with similar clinical populations.

Chronic bronchitis and smoking: A focus group study

P NICOLSON & P ANDERSON, ScHARR, Sheffield University

Chronic bronchitis is a common cause of morbidity and mortality, causing 5 per cent of deaths in the UK. Cigarette smoking exacerbates the symptoms of chronic bronchitis. Little attention has been given to how individuals with chronic bronchitis who smoke account for this behaviour. In this study, four groups of patients with chronic bronchitis (i.e. according to a consensus definition) were identified by GPs in order to collect qualitative data on patients' subjective explanations of their smoking behaviour. Our findings indicate that for those who continue to smoke, 'smoking myths' are used to cope with their anxieties and guilt. Even those who managed to give up smoking believed their former smoking behaviour had a minimal impact on disease progression. The focus group discussions help to explain smoking (and quitting smoking) in the context of a progressive chronic obstructive pulmonary disorder.

Clicking, popping and grinding: Psychological factors influencing temporomandibular joint disorders

N NIVEN, Behavioural Science, Dental School, University of Newcastle-upon-Tyne
TMJ disorders affect approximately 15 per cent of the population. People report symptoms of clicking, popping and grinding whilst speaking or eating. In some instances there is clear evidence of occlusal malfunction, however, in a number of cases the physical dysfunction is disproportionate to the degree of psychological distress. This study investigated 72 participants who had visited their dentist complaining of TMF problems. At the second visit they were randomly allocated to a splint or a placebo splint condition. After the sixth visit those patients who had not improved in the placebo condition 'crossed over' to the real splint condition. Further assessments were made at the 8th and 11th visit. At each visit anxiety was measured using the shortened form of the STAI and hopelessness using the Beck inventory. The latter was included as it provides an unbiased representation of self-efficacy. The results indicated a significant relationship between anxiety and hopelessness; a relationship in hopelessness scores between those in the placebo group and those in the experimental group and finally a significant trend

in increased hopelessness where the treatment was perceived to be ineffective.

Volitional strategies and health-related behaviour: Explaining and improving the translation of intentions into action

S ORBELL & P SHEERAN, Dept of Psychology, University of Sheffield
Previous research has suggested that the translation of difficult behavioural intentions into action may be improved by consideration of volitional strategies. Two longitudinal studies, were conducted to examine strategies which are effective in translating intentions to modify an existing tendency to eat late night snacks into action. A correlational study and an experimental intervention will be reported. Results showed that attention control strategies were effective in explaining changes in consumption of late night snacks. Moreover, when equally motivated participants were provided with an attention control strategy instruction, they were more likely than controls to eat less at follow-up. Evidence also showed that the provision of a volitional strategy augmented the ability of theory of planned behaviour variable to predict behaviour.

Do negative thoughts during menopausal hot flushes increase distress?

F REYNOLDS, Dept of Health Studies, Brunel University, Middlesex

Highly negative or catastrophising thoughts about chronic conditions lower tolerance for symptoms and depress mood. This study examines whether construing menopausal hot flushes in highly negative terms is associated with greater self-reported distress during flush episodes. Fifty-eight women currently experiencing hot flushes completed two questionnaires, 12 months apart. The assessment of negative thoughts about flushing included items developed in previous research. Perceived control and self-esteem were measured by standardised scales. Distress during flush episodes was reported by a simple self-rating. Of all measures, negative thoughts showed the greatest association with ratings of distress during flushing. Negative construing was not significantly related to flush frequency or chronicity. Even though flushes declined in reported frequency over 12 months, catastrophising scores remained highly stable. For women who reject a medical approach to the menopause, the findings support further enquiry into cognitive behavioural interventions for challenging negative thinking, and ameliorating flush distress.

Behavioural models of inherited diseases

V SENIOR, S MICHIE & T MARTEAU, Psychology and Genetics Research Group, Thomas Guy House, London

Aim: To investigate the prevalence and consequences of behavioural models of inherited disease.

Method: Thirty-one individuals at-risk of an inherited form of bowel cancer, and who had undergone genetic testing, completed a measure of attributions for the disease. Principal component analysis resulted in a gene factor and a behaviour factor.

Results: Although the majority of participants perceived genes as having a large influence, participants varied greatly in the extent to which behaviour was perceived to influence the disease. Perceiving behaviour as influential was associated with perceptions of greater control, concern with finding an explanation for the result, and feeling less threatened by test results.

Discussion: The hypothesis that having a behavioural model is adaptive for those at risk for inherited diseases is currently being tested in a sample of patients at-risk for an inherited predisposition to heart disease.

Differences in perceived social support and feeling of loneliness as agents of adolescents' socialisation process between British Asian and other adolescents

M SHAMS, Dept of Psychology, University of Luton

The life-span perspective in socialisation suggests that social reciprocities and social meaning of relationships are two important dimensions of friendship relations. These two dimensions in friendship relations are influencing and influenced by perceived social support and loneliness. This paper aims to examine the support-seeking behaviour of adolescents (14 and 15 years) of Asian and other backgrounds. The paper also aims to examine the social context in which adolescents' activities in choosing social support mechanisms is performed and translated into various affective terms. The inventory of socially supportive behaviours, loneliness scale, ethno-centric friendship and activities after school questionnaire were administered on a representative sample of 824 adolescents from Asian and other backgrounds. The findings show that there are significant differences between Asian and other adolescents in support-seeking behaviour, feelings of loneliness and ethno-centric preferences for friendship. The implications of findings for school environment, and students' achievements are discussed.

Self-schemas and health: self-regulation of the intention-behaviour relation

P SHEERAN & S ORBELL, Dept of Psychology, University of Sheffield

Previous research provided suggestive evidence that having a self-schema in a domain moderates the relationship between intentions and behaviour in that domain. This paper argues that empirical, conceptual and statistical difficulties characterise previous studies and that further examination of this moderator hypothesis is warranted. Two longitudinal studies are reported which were designed to overcome limitations of previous research. Theory of planned behaviour variables and self-schemas were assessed in relation to general and specific dieting behaviours (Study 1) and exercise (Study 2). Findings showed that when participants did not intend to perform a behaviour, it made little difference to their subsequent performance whether or not they had a self-schema in the domain. However, among participants who intended to perform a behaviour, schematics were made more likely to successfully enact their intentions than unschematics. Evidence also suggested that self-schemas may improve prediction of behavioural intentions after attitudes, subjective norms, and perceived behavioural control have been taken into account.

Genetic-testing for Huntington's Disease: Candidates' perceptions of risk and decision-making processes

JA SMITH & S MICHIE, Dept of Psychology, University of Sheffield and Psychology & Genetics Research Group, King's College, London

This study is concerned with how candidates for pre-symptomatic genetic-testing for Huntington's Disease represent their risk status and how they describe their decision whether to take the test. Transcripts of semi-structured interviews with six women offered testing were analysed by interpretative phenomenological analysis (IPA). The women find it difficult to conceptualise their current 50 per cent risk, and express reasons for a perceived enhanced or diminished risk based on for example, number of previous family members affected or family selection of a likely recipient of the faulty gene. Most of the women have decided to take the test. The paper illustrates the contextual factors, such as family discussion or a key triggering event, which can influence the decision process. The study has implications for psychological models of decision-

making and genetic testing protocols and will also be discussed in relation to the literature on lay representations of illness.

Comparison of the health belief model (HBM) and the theory of planned behaviour (TPB) in explaining intention to undergo genetic testing for colorectal cancer

AN STEGGLES, S SUTTON, S GOFF, SV HODSGON & H THOMAS, Health Behaviour Unit, Dept of Epidemiology & Public Health, University College London

As part of a larger project, this study compares the HBM and TPB with respect to intention to undergo a genetic test for Colorectal Cancer in 95 individuals with a family history of colorectal cancer. The postal survey included measures of TPB, HBM, cancer worry, attitudes towards uncertainty, anticipated regret, general health, demographic measures and intention. TPB measures accounted for 51 per cent of the variance, whereas the HBM explained 14 per cent of the variance. Other variables contributed additional variance to the HBM, but not to the TPB. Attitude towards uncertainty was the variable which contributed the most additional variance to the HBM. The TPB was superior to the HBM in its ability to explain intention to undergo genetic testing. Attitude towards uncertainty provided the most useful additional information, and will be explored further in relation to intention to undergo genetic testing.

Applying TPB to a preventative health behaviour in wheelchair users which is surrounded by taboo

L STOCKTON & D PARKER, Psychology Dept, University of Manchester

Purpose: To apply Ajzen's theory of planned behaviour (TPB) to a category of health behaviour which is surrounded by ignorance and taboo. Firstly, in an attempt to explain and predict preventative health behaviour in relation to pressure sore prevention in wheelchair users and their carers, secondly to examine the efficiency of the TPB model with this category of behaviour and thirdly to examine the usefulness of the model for understanding the psychological predictors of this behaviour.

Method: Following a small scale interview study TPB survey questionnaires were distributed to wheelchair users (n=250) and carers (n=100) prior to the development of an intervention programme.

Results: Data analysis is ongoing. Early indications using correlational analyses suggest that low intentions to perform pressure relieving movements are associated with embarrassment and being physically unable to regain the seated position. The relationship between perceived behavioural control and intention suggests that those who think that the behaviour would be difficult to do have weaker intentions. Strong intentions were related to perceived approval from the district nurse, the GP and those seen socially, while there was no relationship between intention and the perceived approval of a partner.

Implication: The ways in which these beliefs and perceptions are to be used to inform the development of an intervention campaign promoting correct movement will be discussed.

The experience of chronic pain: Accounts by professionals and patients

V TROWELL, M LEVINE & A VICKERS, Psychology Dept, Fylde College, Lancaster University

This paper describes a longitudinal qualitative study exploring professionals and patient's accounts of pain and the chronic pain experience. Pain Clinic staff (n=40) were interviewed using a semi-structured interview schedule. Three emergent themes will be discussed. Firstly, professional accounts of their patients pain are compared with patients' accounts of their pain. Secondly, professionals' views of pain patients are explored alongside

patients' accounts of themselves in relation to their pain. Finally, professionals' thoughts about the expectations of patients viz. the Pain Clinic are compared with the views expressed by patients themselves. In particular the paper will focus on the way different models of pain are developed in the interviews; on the importance of identify categories such as 'age' for making sense of the pain experience; and of the advantages of this kind of approach to studying chronic pain.

An evaluation of a psycho-educational group approach for irritable bowel syndrome

J UNWIN, Dept of Clinical Psychology, Chorley

The effectiveness, efficiency and acceptability of a psycho-educational group for IBS patients is evaluated. The group, provided over five, two-hour sessions for up to eight patients, comprises information about IBS, dietary advice, stress management and relaxation techniques, and encouraging the use of appropriate coping strategies. Patients are assessed before and after the group and at six month and one year follow-up, using the hospital anxiety and depression scale, a symptom questionnaire and an IBS Quality of Life of scale. Following the group there is a significant improvement in mood and IBS quality of life. The programme is efficient and highly acceptable to participants. It can be concluded that the negative impact of IBS symptoms on mood and quality of life can be lessened using a group psycho-educational approach which is both efficient and acceptable. Further research in primary care settings is proposed.

POSTER PRESENTATIONS

Psycho-social implications of male infertility in Pakistani families

M AHMED, CE CHU & FM ROBSON, Yorkshire Regional Genetics Service, Dept of Clinical Genetics, St James' University Hospital, Leeds

There is stigma attached to infertility among Pakistani families. Traditionally, females are focused on as the cause of the problem. However, Pakistani couples are increasingly being referred for genetic counselling following diagnosis of male infertility, due to chromosomal and genetic cause. During initial counselling, male partners are encouraged to speak about their experience of infertility. This case study describes the dynamics of one large Pakistani family, with three infertile males, affected with congenital bilateral absence of the vas deferens, and the implications of this diagnosis on the extended family. It shows that infertility has profound psychosocial implications on the family, leading to depression and anxiety in both male and female partners. It highlights that cultural awareness, insight into differing cultural manifestations of distress and an understanding of Muslim family dynamics is vital. In conclusion, there is a need for culturally sensitive social and psychological support for couples, preferably in the appropriate language.

Why do patients choose to die?

A literature review on the psychological impact of chronic renal failure

B AVRIL & A MADILL, School of Psychology, University of Leeds

Haemodialysis is a life sustaining machine for patients with chronic renal (kidney) failure. Without this treatment such patients will die. When patients feel that haemodialysis no longer improves or sustains their quality of life and that the associated burdens are overwhelming (e.g. restrictive diet, dialysis regimen, and medication), many decide to withdraw from treatment. This becomes a very traumatic time for the patient, the patient's family, and the medical team. A growing body of research links the

psychological and social problems associated with haemodialysis to the patient's decision to withdraw from treatment. This is a developing area of research and this paper addresses the factors potentially contributing to, what is ultimately, the patients decision to die. Reviewing the literature, it is concluded that patients with chronic renal failure face considerable problems related to their illness. Not only do they have to contend with a compromised quality of life, they depend upon a regular interface with technology, the psychological impact of which is not well understood. These factors combined may lead many to depression and contribute to a patient's decision to withdraw from treatment. Consideration is given to euthanasia and what constitutes a 'good death'.

Are dental clinics a good setting for giving dietary advice? Results from a baseline survey

AH BAKER & J WARDLE, Health Behaviour Unit, Dept of Epidemiology and Public Health, University College London

The aim of the study was to investigate whether dental clinics are a good setting for offering advice about healthy eating. Data were collected from approximately 1,700 adults attending dental clinics across London. Ninety-five per cent of people who were asked to participate, completed a questionnaire assessing dietary behaviour and nutritional knowledge. The main reasons given for not taking part were lack of time and physical incapacity. Results reveal that there were low levels of fruit and vegetable consumption, and poor levels of nutritional knowledge. Almost 50 per cent of participants voluntarily requested information about adopting a healthy diet. There were no significant differences in behavioural and knowledge factors between those who requested information and those who did not nor demographic characteristics such as age, gender or educational level. Response rates and interest levels indicate that people attending dental clinics are receptive to giving health related information about themselves, and are interested in adopting healthy diets.

The ADDLoC (Audit of Diabetes-Dependent Locus of Control): Positive and negative outcomes in a balanced measure

S BARENDSE, J SPEIGHT & C BRADLEY, Health Psychology Research, Dept of Psychology, University of London

Background: Clinical research has demonstrated the value of perceived control measures in understanding patients' preferences, differing levels of self-care, and suitability for different forms of treatment. However, inherent in existing instruments are problems of length in attribution-style-type measures, or imbalance of item content in locus-of-control-type measures. The ADDLoC is designed to be diabetes-specific and appropriate for research/clinical settings. ADDLoC design balances items across four subscales (internality, medical control, significant others and chance) and between positive/negative outcomes. The four loci of control over positive/negative outcomes can thus be investigated separately.

Method: A 40-item questionnaire was investigated using data from 789 outpatients with diabetes. Results: A 24-item scale was developed with clear factor structure for eight 3-item subscales. Subscale reliabilities were quite sufficient for 3-item subscales (alpha coefficients: 0.60 to 0.74).

Conclusion: ADDLoC provides the first reliable, diabetes-specific, perceived control measure that is both short and well balanced.

Screening and risk assessment for acute and recurrent back pain in primary and secondary care settings: 'Can we predict outcome?' An evaluation

A BEATTIE, South Gloucestershire

Aims: The aims of this paper were to evaluate the reliability and validity of an acute low back pain screening questionnaire developed by Linton and Hallden (1996). This questionnaire focuses on psychosocial factors and claims to identify individuals at risk for the propensity for developing chronic pain.

Methods: A within subjects repeated measures design was utilised on participants who reported a history of acute or recurrent low back pain in Primary and Secondary Care settings. Two hypotheses regarding the relationship between 'at risk' and 'not at-risk' status were examined. **Measures:** Three measures were utilised; the Linton and Hallden screening questionnaire, Beliefs about Pain Control (BPCQ, Skevington 1990) and the WHOQOLBREF (1996) quality of life measure.

Analyses: Multivariate analyses of variance (MANOVA) were utilised in order to test the hypotheses. Correlational analysis was utilised in order to explore content validity.

Results: The psychometric properties of the Linton and Hallden (1996) questionnaire demonstrated low internal consistency (reliability). Content, criterion, and predictive validity were found to be good in that psychosocial factors were found to be significant and related. Participants identified as 'at-risk' scored significantly differently on these variables in comparison to those 'not at-risk'. Implications: This questionnaire has the potential to assist General Practitioners in their assessment of who is more at risk for developing chronic pain. Thus a more proactive approach could be instigated at an earlier time period.

Mediators of minor illness in university students: Two exploratory studies

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Minor illness is reported to be affected by a number of factors. This report investigates the effect of emotional and cognitive variables on minor illness. Two studies are reported, with a sample of 45 students in study 1, 13 of whom agreed to take part in study 2. Self-report questionnaires included measures for hassles, uplifts, anxiety, stress and minor illness symptoms. High ($n=22$) and low ($n=23$) illness groups were identified. T tests revealed the high illness group had significantly ($p < 0.04$) higher levels of anxiety, ambiguous job stress, health-related hassles, depression and tense mood, and significantly ($p < 0.04$) lower levels of self-esteem, and energetic mood. Stepwise multiple regression identified anxiety and depression as strong predictors of minor illness ($p < 0.02$). The longitudinal aspect of the study revealed increased hassles and mood ($p < 0.05$), family ($p < 0.0008$) and health ($p < 0.001$) uplifts and self-esteem. This may explain the decrease in illness report. Results are interpreted in relation to Lazarus (1991) cognitive-motivational-relational theory of emotion.

Predictors of smoking cessation

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Elements of Bagozzi's goal directed theory (1992), Gibbons and Gerrard's prototype willingness model (1995, 1997) and Gollwitzer and Brandstatter's theory of implementation intentions (1997) were assessed with regards to smoking cessation. Self-report data were collected at two time intervals. At time one, measures of past and current behaviour were collected, along with evaluations of various strategies that could be employed in order to reduce or cease smoking. In addition, prototype

perceptions and measures of intention and willingness were collected. One month later, smoking behaviour was measured. Logistic regression showed that past trying and intention to quit were the most important predictors of smoking cessation. Although high appraisal of a strategy did not predict cessation, 74 per cent of those who did cease reported using at least one of the strategies suggested. The value of planning and focusing on means for behaviour change are considered.

Predicting activity limitations in healthy populations

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Background: The WHO has recently revised its model of disability and is now proposing a model of 'activity limitations'. This study examines whether psychological predictors of activity limitations in patients with impairments also predict activity limitations in healthy populations.

Aims: To examine perceived control as a predictor of activity limitations in a healthy population.

Method: 57 students (28M, 29F; mean age – 23 yrs, s.d. – 4.6 yrs) completed measures of perceived control prior to completing a cycling task which gave a measure of activity limitations as distance achieved in four minutes.

Results: Measures of perceived control predicted activity limitations in healthy students.

Conclusion: Results suggest that theoretical models which have been applied to predict level of performance of individuals without disease based activity limitations may also be applicable to impaired populations. The value of disease or impairment based models of activity limitations is questioned.

Music lessons on prescription? Therapeutic benefits for children with chronic anxiety

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This exploratory study investigated the therapeutic potential of music lessons (not therapy) for children with chronic anxiety problems. Five volunteers aged 8 to 16, recruited through child guidance, were offered a choice of instrument. Up to 15 hours of individual tuition, over 30 weeks, were provided by experienced music teachers at HE college or the teacher's home. Qualitative evaluation with children, parents, music teachers and therapists revealed striking improvements. James, unable to leave home alone for ten years, now travels independently to study music at FE college; Jason, severely isolated and self-harming, joined the Sea Cadets and went to camp; Mary gained control over panic attacks; Emily won entry to school peer group; Richard, with ADS, concentrated for long periods. Outcomes support alternative/complementary psychological models: learning music is intrinsically motivating; musical skill increases self-efficacy, confidence and esteem; music-making facilitates attention, communication and emotional release/control; a one-to-one supportive educational environment, free of association with 'problems', provides safe transition from home. Free lessons focus on music as process, rather than product.

The experience of long-term follow-up for women who have suffered early stage gynaecological cancer: A qualitative interview study

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Purpose: To investigate the factors involved in the wish for continuing long term follow up for early stage gynaecological cancer in the absence of obvious clinical benefit.

Design: Qualitative study comprising semi-structured, individual interviews.

Results: Women who continue to express a need for follow up appointments years after the

treatment of active disease are seeking to alleviate anxiety regarding possible recurrent illness. The main element of follow up that alleviates recurrence anxiety is verbal reassurance from a gynaecological consultant. There is an unwillingness to regard cancer remission as a healthy state, both cultural 'lay' beliefs and family support exacerbate this difficulty. Cancer remission is seen as another illness stage.

Conclusions: The processes involved in follow up for cancers with a very low recurrence risk are complex. Follow up information is perhaps medical, but women who have a continued need for follow up in the absence of any clinical disease are attending for psychological purposes.

'Dying to be heard' – assessing quality of life in adolescents with a life-limiting condition

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This longitudinal study aims to assess the quality of life experiences by life-limited adolescents, their primary carers and siblings. Quality of life instruments are being used to measure the psychological, physical and social health of adolescents and their immediate families in three groups: Adolescents who are life limited (not expected to live past the age of 18), adolescents who are insulin-dependent diabetics, have a chronic illness, but are not life-limited and a healthy control group of adolescents. Life-limited adolescents have been sampled from 62 adolescents currently being supported by Acorns Children's Hospice; these adolescents have been matched with an insulin dependent diabetic of the same age and gender. Quality of life is being recorded three times over an 18-month period, during which time the physical health of many of the life-limited adolescents will have deteriorated. The research proposed in this study will hopefully benefit the life-limited adolescents and their families, through their needs, as illustrated by deficits in their quality of life, being met more accurately by their carers.

An exploration of factors influencing patient performance on physical tests before and after a pain management programme

TJ BROWNING, R OWEN & SM SKEVINGTON, Minchinhampton, Stroud, Gloucestershire, and University of Bath

This qualitative study was designed to explore factors influencing patient performance on physical tests used for clinical assessment and outcome measurement before and after an outpatient cognitive-behavioural pain management programme. Research in social cognition and clinical experience of the multidisciplinary team involved in the programme indicate that patient performance on a five minute walk test and one minute sit to stand test may be a reflection of their perception of the task and of demand characteristics rather than a reliable measure of their physical ability. Patients were interviewed either before ($n=25$) or after ($n=24$) the programme using a semi-structured interview schedule, and thematic analysis was used to analyse the responses. Responses indicate that patient perception of the nature and purpose of the physical tests is a factor in the way that the tests are approached. Themes which emerged from the interviews included perceived benchmark (internal/external), threat or challenge, and control.

Attitudes towards abortion and pre-natal diagnosis among women who have a sibling with Downs Syndrome

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Pre-natal testing for Downs Syndrome (DS) is now offered many pregnant women, but, few will have any 'lived experience' of the condition with which to inform their decision making. A questionnaire was sent to 78 women (mean age 28), each of whom had a sibling with DS. 54 per cent indicated that they would use diagnostic tests for DS in the future, 37 per cent said they would not, 9 per cent were unsure. In contrast, 53 per cent of respondents said they would not consider abortion for DS, 33 per cent would, 14 per cent were unsure. Neither attitude related significantly to the perceived level of learning disability, or physical health problems of the sibling, however the presence of mental health problems was strongly related to the intention to consider abortion. Logistic regression revealed that both attitudes were most strongly predicted by the perceived burden of caring for a child with DS and perceived family approval of termination for the condition.

The development of an instrument to assess emotional and behavioural problems following brain injury in adults

T CALVERT, A HOUSE & M WATERMAN, School of Psychology, University of Leeds
Our research is concerned with the development of a disorder-specific instrument to assess the emotional and behavioural problems encountered in adults after brain injury. These problems are important because they are long lasting and may even increase over time (Johnson & Balleny 1996). At present no satisfactory instrument exists. There are inherent methodological challenges, including the difficulties of identifying relevant symptoms, defining them, and structuring an instrument to assess them. There are also particular problems in determining the reliability and validity of assessment in the brain-injured. In the paper, we argue the need for a new instrument and describe our current work in developing one. The instrument will be clinically useful as an outcome measure in clinical trials, or as a tool to monitor clinical practice. It will also form the basis for a more satisfactory nomenclature and enable research to examine the relationship between emotional and behavioural problems and other social, psychological or biological variables associated with brain damage.

The dual role of emotions and cognitions as moderators of depression: A longitudinal study of medical students

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Aim: Research indicates that psychological variables have direct or moderating influences on stress outcomes during medical education. However, although times when depression occurs have been identified, little is known about what underlies this change. In the attempt to elucidate such processes this paper reports on a longitudinal study of 170 preclinical students.

Methods: Measures on standardised questionnaires and of salivary cortisol were obtained throughout two years of medical education. Then, high and low stress points were identified and the influences of cognitions and emotions on depression were evaluated.

Results: Results indicated that psychological influences on depression were less pronounced than such influences on anxiety observed in previous research.

Discussion/Conclusion: In the attempt to reconcile such findings it is hypothesised that if cognitive strategies continue to generate demands which exceed personal resources, the

ability to maintain appropriate strategies many become undermined and may then be reflected in raised depression.

The effect of different information-giving methods on the use of patient-controlled analgesia

R COE & F STANTON, Dept of Psychology, City University, London

This study explored the effects of different styles of information presentation on the use of patient controlled analgesia (PCA). Forty-five consecutive patients were chosen from a waiting list for total abdominal hysterectomy and randomly assigned to groups receiving either information regarding PCA usage, presented in textual or annotated diagrammatic form, or neutral information about ward routine. All participants completed a pre-intervention questionnaire assessing knowledge, attitudes and concerns regarding PCA, and another measuring self-efficacy for PCA pump use. Each group then received their assigned information. A second questionnaire was administered following post-operative PCA usage and assessed retention of information, changes in cognitions and effectiveness of PCA use. Significant differences were found between groups in the amount of information retained, the degree of pain experienced and the use of PCA. The small sample size precludes the drawing of firm conclusions but possible reasons for these differences are discussed.

Fear of complications, perceptions of threat, adherence and metabolic control among adults with diabetes

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This study aimed to determine the extent to which adults with diabetes worry about developing hypoglycaemia and long-term degenerative complications, and to examine whether such concerns were associated with diabetes-related health beliefs, adherence to treatment, and metabolic control. Fifty-one adults with Type I and 50 with Type II diabetes were recruited. A multiple regression analysis explained 28 per cent (Adj. R²) of the variance in scores on the fear of development of complications scale. Perceived severity of diabetes and fear of hypoglycaemia were the two variables accounting for most of the variance. For fear of hypoglycaemia, 37 per cent (Adj. R²) of the variance in scores was accounted for. Significant variables were duration of diabetes, perceived severity of hypoglycaemia, level of dietary self care, and fear of complications. These findings are considered in terms of addressing fears related to diabetes.

The process of psychological adaptation from non-insulin-use to insulin-use in Type 2 diabetes mellitus: An exploration using the illness-representation model

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This study used the illness representation model to investigate how tablet-using and insulin-using Type 2 diabetes patients with either good or poor metabolic control differ in the way they perceive their condition. Other variables such as psychological adjustment (ATT19), quality of life (ADDQoL), treatment satisfaction (DTSQ), and psychiatric morbidity (HADS) were also assessed. 158 patients with Type 2 diabetes were assigned to four comparison groups based upon treatment modality and metabolic control as assessed by HbA1c (taking 8 per cent as a cut-off). A number of differences were found between insulin-users and tablet-users which replicated the findings of previous research. In addition, analyses revealed a significant interaction between treatment

modality and metabolic control status for psychological adjustment. This revealed that those with poor metabolic control, despite having transferred to insulin, were less well adjusted to living with diabetes than any of the comparison groups. A similar pattern emerged for the interaction between treatment modality and subjective evaluation of control. In contrast, those who transferred to insulin and who perceived themselves to have good diabetic control were significantly better adjusted than any of the other comparison groups. Although no significant interactions were found for illness representations, possible explanations for this are explored.

Emotionalism after stroke is associated with poor psychological adjustment

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The aims were to investigate the association between psychological adjustment and post-stroke emotionalism, and to obtain descriptive data about the components of emotionalism. A between-subjects design compared patients with and without emotionalism at one and four months post-stroke. Patients with emotionalism completed a semi-structured interview at four months post-stroke, analysed qualitatively. We recruited 65 hospital patients with stroke, of whom 19 had emotionalism. All patients completed measures of psychological distress, adjustment and coping (GHQ-12, Impact of Events Scale; Recovery Locus of Control Scale; Mental Adjustment to Stroke Scale) at one and four months post-stroke. Patients with emotionalism had significantly poorer psychological adjustment at one month, but this effect was not apparent at four months. Qualitative data suggest that emotionalism reflects a felt emotion, has a number of triggers, can be controlled to some extent, and is viewed by sufferers as the result of psychological precipitants. This small study confirms that post-stroke emotionalism is associated with poor psychological adjustment.

A study to investigate the psychological effects of physical activity (PA) and fitness on children with insulin-dependent diabetes mellitus (IDDM)

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PA is psychologically beneficial for healthy youths, aged 11-21, especially in terms of self esteem, self concept, stress and depressive symptoms (Calfas & Taylor 1994). This study establishes levels of PA, fitness and psychological variables in the population of children aged 9-15 with IDDM and examines relationships between them. Psychological inventories used are the Diabetes Self Efficacy Questionnaire (Grossman, Brink *et al.*, 1987), the Youth Diabetes Quality of Life Questionnaire (Ingersoll & Marrero, 1991) and the Children and Youth Physical Self Perception Profile (Whitehead, 1995). PA is measured using heart rate telemetry over four days, fitness is established by a VO₂max test. Preliminary data (n=15) suggest PA levels are lower than those recommended by Calfas & Taylor (1994) to improve psychological health. There is an inverse relationship between PA and age. Time spent in PA with heart rate above 70 per cent of its maximum is positively correlated with attractive body self perception (r=0.52, p=0.01). Within the psychological variables self efficacy for diabetes is positively correlated with global self worth (r=0.55 p=0.07).

Cardiovascular reactivity to a video game: Effects of experimenter supportiveness, hostility and social support network

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Previous research shows that cardiovascular

reactivity varies according to situational social support and hostility. This study investigated whether a manipulation of experimenter supportiveness would affect cardiovascular reactivity during a video game stressor, and if this relationship would vary according to how hostile participants were. Effects of social support received outside of the laboratory were also analysed. Among 40 male undergraduate students, heart rate was more reactive in the support condition than in the no-support condition, possibly because social support elicited a greater level of engagement in the task. High hostility with a small support network was associated with the highest diastolic blood pressure reactivity. This interaction was not readily explained by increased involvement. No significant relationships were found for systolic blood pressure. Diastolic blood pressure findings were consistent with the hypothesis that heightened reactivity to social interaction mediates the relationship between hostility and coronary heart disease and hypertension.

The relationship between asthma, self-esteem, gender and disease knowledge in adolescents

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The relationship between asthma, self-esteem, gender and disease knowledge, was investigated in 18 adolescent asthmatics and 18 matched healthy controls, from a non-clinical school population. Contrary to hypotheses no significant differences on global self-esteem were observed between asthmatic and non-asthmatic adolescents, or by gender in asthmatic adolescents. A significant interaction was observed by health status and gender on the parental/home-related self-esteem sub-scale, with males reporting lower scores in comparison to healthy males, healthy females and asthmatic females. It is argued that well-controlled adolescent male asthmatics appear to be more vulnerable to low self-esteem than females. The correlation revealed no significant relationship between self-esteem and asthma knowledge. Future research suggested includes the need for longitudinal prospective studies which might provide an enhanced understanding of the relationship between the variables. It is concluded that no significant relationship between asthma, self-esteem, gender and disease knowledge exists, in adolescents with well-controlled asthma and low functional impairment.

Physician heal thyself – the emotional demands on general practitioners

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Recent psychological debate regarding the panegyric discourse on stress management, and the concept of stress itself, argues for more comprehensive distinctions between specific emotional demands on, and of, specific occupational arenas. Emotional dissonance (ED – the conflict between the emotion experienced and the emotion one expected to experience) is potentially increased in the highly emotive area of healthcare; in particular with General Practitioners. This occupational group endeavours to maintain a professional, emotionally neutral, image; managing their emotions to suit strong public and professional expectations whilst involved in long term relationships with patients and colleagues in a continually changing provisional system. This poster reports the findings from the first stage of an on-going study into the emotional experiences of twenty GPs from a variety of practices across the north of England. In-depth interviews allowed exploration of AED origin, variety of impact and coping strategies employed. All participants reported emotional problems connected with work. The majority were related to difficulties with relationships, both patients and other health professionals. Emotional exhaustion was

reported as having major impact on family relationships and the effectiveness of coping strategies seemed dependent on depth and variety of practice experience rather than length of time practising. Most felt medical training and education marginalised the emotional demands of the job and so left them ill-equipped.

Individuals and sex differences in cardiovascular responses to social support among individuals facing acute stress

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Purpose: The experiment examined the effect of social support on cardiovascular reactivity to an interpersonal stressor and the mediating role of hostility and sex.

Method: 64 normotensive individuals were classified as either high or low on the Cook & Medley (1954) hostility scale. They performed a speech task either alone or in the presence of a friend. Blood-pressure and heart-rate were recorded pre-task, during speech and post-task.

Results: ANCOVA revealed a 3-way support X hostility X sex interaction. Males 'high' in hostility benefited from the presence of a friend indicated by lower heart rate responses. Females 'high' in hostility, however, exhibited higher heart rate reactivity with a friend compared to when alone.

Conclusions: Whether or not social support attenuates responses to stress depends on additional factors such as the sex of the recipient and their level of hostility. This may have implications for support interventions.

Effects of guided written disclosure of traumas on somatisation and clinic visits among frequent Israeli clinic visitors

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Based on previous studies of trauma-survivors and neuroscience, a guided disclosure paradigm (GDP) for writing about traumas was developed. This study tests the effects of the GDP on somatisation and clinic visits among 50 frequent visitors. Patients were randomly assigned to either casual-content writing or to the GDP trauma-writing. GDP-patients described for three days upsetting events in chronological order, their thoughts and feelings, and the event's impact on them. Somatisation, clinic visits and mood are reassessed blindly three months later. GDP-patients' writings were significantly higher on insight/acceptance and had significantly more negative-affect words than controls ($p < .01$). In the GDP-group, the correlation between amount of insight/acceptance words and somatisation 3-months later was inverse, after controlling for initial somatisation (Kendall's correlation = $-.39$, $p < .05$). Thus, patients can perform the GDP, and its enhancing of insight/acceptance may reduce somatisation in frequent clinic visitors. Final results will be presented at the conference.

Development and validation of a brief scale for assessing hostility for physicians

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We developed a brief hostility scale for clinics. Using the 29-item Buss-Perry (1992) Aggression-Questionnaire, an eight-item New-Buss was constructed. In Study 1 (95 Israelis), internal reliability was .69, and full and brief scales were correlated $r = .92$. New-Buss scores correlated with reported road-hostility, external locus of control and dangerous driving $r = .24$; $r = .29$; $r = .24$; respectively ($ps < .01$). In Study 2 (279 Americans), internal reliability was .81 and full and brief scales were correlated $r = .94$. New-Buss

scores correlated with Barefoot's refined Ho, Anger-Out, Anger-In, and Agreeableness personality $r = .50$; $r = .64$; $r = .39$; $r = -.45$; respectively ($ps < .001$). New-Buss was more strongly correlated with Anger-Out than Anger-In. Finally, 35 per cent of family-medicine residents reported high chances of using the scale in future practice. The New-Buss is a brief, reliable, cross-culturally-valid and feasible measure of primarily antagonistic hostility.

Expectations of future pain and disability in individuals with RA and their doctors

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Expectations allow us to form predictions about our environment and are used to guide behaviour. This study set out to examine individuals with RA expectations of future pain and disability.

Methods: Eighty-six individuals with RA their doctors and a control group completed the Health Assessment Questionnaire 2 (current disability and pain) and their expectations of disability and pain in 5 years. In addition the patients completed the HADS, MHLC, Health Value Scale and IPQ.

Results: Current and future expectations of patients with RA, their doctors and control subjects. Age, current level of disability and IHLC and control (IPQ) were all predictive of patients expectations of future disability. These variables accounted for 0.64 of the variance of patients expectations of future disability. In contrast employment and current disability were associated with doctors predictions of this groups future disability.

Conclusion: Individuals perceptions of their control are important in their expectations of future disability.

Withdrawal symptoms? Well, what do you expect?

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The majority of studies of the effects of smoking cessation have started from the basic premise that continued smoking is a result of pharmacological addiction to nicotine, and have attributed the negative affect often found in abstinence to the loss of nicotine. The aim of this study was to explore the role of other factors in smoking cessation experiences, by examining the cause to which negative and positive effects are attributed. A questionnaire measuring abstinence experiences allowed for the attribution of mood states to various causes. Analyses assessed the frequency of attribution and re-attribution to abstinence. Results confirmed that experiences presented in negative terminology are more likely to be associated with abstinence than experiences presented in positive terminology. The overall number of attributions and re-attributions to abstinence reveal the salience of quitting and suggest that experiences are influenced by prior beliefs and expectations.

Trait and state hunger in the morbidly obese

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Aim: This study aimed to evaluate the role of hunger in the morbidly obese and is part of a comprehensive study on appetite control in this population (Gillett *et al.*, 1998).

Method: 32 Patients (9m 23f, BMI range 34.2 – 73.0) completed psychometric measures of habitual eating style and a 3 day dietary diary with temporal ratings of hunger and motivation to eat.

Results: Psychometrically assessed hunger score (trait) correlated with fluctuations of disinhibition ($\rho = .6$, $p < .002$), external eating ($\rho = .6 < .001$), binge eating ($\rho = .4$, $p < .02$) and with high fat food preference ($\rho = .6$, $p < .005$). For several patients hunger measured by temporal

ratings (state) were found to be unusually erratic and were uncoupled urges to eat.

Implications: The relationship of trait hunger with disordered eating, combined with the erratic nature of reported state hunger, suggest that the experience of hunger for the morbidly obese individual is a problem which needs to be dealt with in treatment.

The psychological impact of infertility on young male cancer survivors: A qualitative study

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Intensive treatment regimes that are known to have a potential risk of infertility sometimes have to be given to young boys who have aggressive malignant disease. Long-term care must therefore include further discussion of these patients' impaired fertility. This study describes the results of a series of semi-structured interviews with 15 young male cancer survivors regarding their experience of receiving feedback on their probable fertility status. Characteristics of the research sample are compared to those of the larger sub-group of clinic attenders with potential fertility problems. All of the interviews were conducted by a clinical psychologist formerly uninvolved with their treatment. The researcher's field notes were analysed qualitatively using the NUD*ist programme. Reliability checks on the recording and coding of the interview data are provided. The results of the study are organised according to the 4 emergent themes of initial emotional reaction to the news of probable infertility; the coping styles adopted; the impact on the person's developing identity; and responses to the offer of semen analysis. This draft analysis has been circulated to 5 of the 15 research participants for detailed feedback. Finally the implications of this study for the future practice of our long-term follow-up clinic are considered.

The effectiveness of the use of patient-based measures of health in routine practice in improving the process and outcomes of patient care: A literature review

J GREENHALGH & KA MEADOWS, Nuffield Institute for Health, University of Leeds, Leeds

This study aimed to systematically review the evidence for the effectiveness of using patient based measures of health within routine clinical practice in the care of individual patients. Thirteen relevant studies were located from three computerised databases for 1987 to 1997. The study found that clinicians see information from patient based measures of health as valuable in the overall assessment of the patient and that its feedback to clinicians increases the detection of psychological and to a lesser extent functional problems. However, there was little evidence to suggest their use substantially changed patient management or improved patient outcomes. The ways in which patient based measures of health are implemented in routine practice may have an impact on their effectiveness. Implementation strategies that are guided by theories of individual and organisational change might allow the barriers to using patient based measures of health in routine practice to be identified and overcome more effectively.

Individual and health-related quality of life in end stage renal disease

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Aim: To assess quality of life (QoL) of individuals in end stage renal disease (ESRD) and to compare the impact of different forms of dialysis treatment. **Methods:** Patients on hospital haemodialysis (n=48) and on Continuous Ambulatory Peritoneal

Dialysis (CAPD) (n=45) were assessed with the SF-36 and the SEIQoL.

Results: Scores on the SF-36 were impaired compared to general population norms particularly in general health perceptions, physical functioning and physical role limitations. CAPD patients had significantly lower QoL than haemodialysis patients on vitality ($p < .01$), social functioning ($p < .01$), physical role limitations ($p < .01$) and pain ($p < .01$). No differences were found in SEIQoL score. Significant albeit weak correlations were found between the two QoL measures suggesting that they assess different QoL dimensions.

Conclusion: ESRD patients experience a compromised QoL which is influenced by different forms of dialysis.

Attributions and adjustment to serious illness: A systematic review of the literature

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Introduction: Studies examining the association between attributions for serious illness and outcomes have produced contradictory results. Previous reviews have not produced consensus. It is generally assumed that behavioural self-blame is adaptive and blaming others is maladaptive. The aim of the current review is to use a systematic method to clarify the association between attributions for serious illness and subsequent outcomes.

Methods: Computerised databases, bibliographies, published reviews, and names of key authors were searched. Attributions and outcomes were recoded into 11 categories and outcomes into three categories. The frequency and direction of associations between attributions and outcomes were assessed. The effects of type of outcome, the nature of the event, gender of participants, time elapsed from the event to data collection, and sample size were examined.

Results: Forty-eight data sets were identified: 36 were of patients' attributions for their own illnesses, and 12 were of parents' attributions for the death, illness of their children. The majority of analyses (83 per cent) showed no association between attributions and outcomes, 2 per cent were associated with better outcomes, and 15 per cent with poorer outcomes. The hypotheses that behavioural self-blame is adaptive and blaming others is maladaptive were not upheld. No attribution was strongly associated with better outcomes. Characterological self-blame was most often associated with poorer outcomes. Attributions were more likely to be associated with poorer outcomes if participants were female and sample sizes were larger.

Conclusions: Attributions are most often not associated with outcomes. The conditions under which attributions are, or are not, associated with outcomes should be examined empirically.

False negative results on pre-natal screening for Downs Syndrome psychological impact on parents

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Introduction: Serum Screening for Downs Syndrome (DS) is offered to the majority of pregnant women in the UK and US. Nevertheless, some women will give birth to children with DS. This is for two main reasons: firstly, some women do not undergo screening (not offered or decline tests); secondly, screening does not detect all cases, such women receiving a false negative, or low risk result. The current study is the first systematic attempt to document the psychological consequences of false negative results on screening.

Methods: The sample comprised parents of 179 children with DS (59 not offered the test; 34 declined; 86 received a false negative result). Parents completed measures of anxiety,

depression, parenting stress, acceptance of the child, and attributions of blame for the birth of the child with Downs Syndrome.

Results: Mothers of children in the false negative group had a lower acceptance of their children (mean=125; CI=121, 129) than did those who had declined testing (mean=134, CI=130, 138). Mothers and fathers who had received a false negative result on screening were more likely to blame others for this outcome (mothers=28 per cent (95 per cent CI=18,40); fathers=27 per cent (95 per cent CI=15, 42)) than were parents who had not been offered the test (mothers=13 per cent (95 per cent CI=9, 27); fathers=14 per cent (95 per cent CI=0, 11); fathers 0 per cent (CI=0, 16)). Blaming others was associated with higher, and clinically significant levels of parenting stress and poorer acceptance of the child.

Conclusions: These data suggest that a false negative result on pre-natal screening has a small adverse effect on parental adjustment as much as four years after the birth of an affected child.

Breast reconstruction: A qualitative study of women's decision-making process

D HARCOURT, N RUMSEY, N AMBLER & M HASLUM, Dept of Psychology, University of the West of England, Bristol

Breast reconstructive surgery aims to restore a breast shape for women who are undergoing or have previously had a mastectomy (M) following diagnosis of breast cancer. However, there is a dearth of research examining how women decide for or against breast reconstruction (BR). 93 women who had made this decision were interviewed prior to surgery. Interviews were transcribed and analysed using a thematic approach. The majority of women (78 per cent) had made an immediate decision (47M; 26 BR), 13 actively sought information and considered each possibility before making their choice (4 M; 9 BR), whilst 6 deliberated over the options available and reported considerable difficulty in making a decision (1 M; 5 BR). The decision-making process is influenced both by a woman's perceptions of the options available to her and the hospital system in which she is treated, including health professionals' attitudes towards breast reconstruction. The implications of these findings for the provision of care for women diagnosed with breast cancer are discussed.

A targeted approach to reducing maternal smoking

C HASLAM, Dept of Human Sciences, Loughborough University

The Government White Paper *Smoking Kills* published in December 1998 sets new and more ambitious targets for reducing maternal smoking. This is despite the fact that consecutive surveys have shown that the prevalence of maternal smoking has not changed since the 1992 targets (Government White Paper *The Health of the Nation*). Based on current literature, including the author's recent research on maternal smoking, this paper argues that future research and smoking cessation interventions should:

1. Encompass not just the pregnant women but also partners and close family members.
2. Pay particular attention to young, socially disadvantaged groups.
3. Develop and evaluate stage dependent antenatal smoking cessation materials (tailored to the user's level of intention to quit). By adopting these measures, researchers and health care professionals may finally reduce infant deaths and the numerous infant and child health problems related to maternal smoking and household tobacco exposure.

Smoking behaviour and smoking motivations: The effects of alcohol

CA HAYNES & KJ CLEMENTS, Institute of Behavioural Sciences, University of Derby

The present study examines the relationship between smoking motivations and both self-report and experimental measures of smoking behaviour. It also examines the effects of alcohol

consumption on the relationship between smoking motivations and smoking. Forty-eight individuals completed self-report measures of smoking, and participated in an experiment comparing smoking behaviour in people who had consumed either alcoholic, or non-alcohol drinks. Results indicate a relationship between self-reported and experimental measures of smoking, and various smoking motivation factors. When separate analyses were conducted between groups who had consumed alcoholic or non-alcohol drinks, smoking motivations only predicted smoking behaviour in those participants who had not consumed alcohol. Smoking for relief of negative affect, for intellectual stimulation and curiosity, and for social attractiveness and sensory stimulation significantly predicted experimental measures of smoking behaviour in the non-alcohol conditions. This indicates that smoking motivations are important predictors, however when alcohol has been consumed, smoking motivational factors no longer influence smoking behaviour.

Coping effectiveness training (CET) in people with cancer – a randomised control trial

P HOLLY & P KENNEDY, Psychology Dept, Stoke Mandeville Hospital, Aylesbury, Bucks
Reviews point to the usefulness of psychological interventions in reducing distress in cancer patients. Group therapy is also considered to be a helpful intervention for this patient group. Evidence suggests that structured packages have specific advantages over supportive therapies alone, although few studies have evaluated structured group therapies for cancer patients. This study reports on the development and proposed evaluation of a brief group based psychological intervention for cancer patients, known as 'Coping Effectiveness Training'. CET is a structured package, consisting of seven 60-75 minute sessions. Components include appraisal training, cognitive-behavioural coping skills training, assertion skills and developing social support networks. Already found to be an effective psychological intervention in patients with HIV and Spinal Cord Injury, the package is adapted for cancer patients. Evaluation – randomised control trial. Outcome measures include the Hospital Anxiety and Depression Scale, the Mental Adjustment to Cancer Scale, The EORTC Quality of Life Measure, the Short Form Social Problem Solving Inventory and a satisfaction scale.

Social support: Parents of children with autism using an e-mail group

J HUWS, RSP JONES & DK INGLEDEW, School of Psychology, University of Wales, Bangor
When facing challenging life events, people often turn to those in their social worlds for support. The purpose of this study was to examine how an email group used by parents of children with autism was used as a way of gaining such support. The messages sent were analysed using a grounded theory approach (Strauss & Corbin, 1998). Preliminary findings show that interactions occurring on-line are grounded in the everyday experiences occurring off-line. In the early stages of communicating, parents show attributes of intimacy and belonging towards each other. They use the group as a way of gaining a sense of meaning, and indicate that their own lives are largely centred upon the lives of their children. It is concluded that models of stress, coping and social support can be developed by exploring how people talk about their situation via this medium.

Personality, safety behaviour and comparative optimism in climbers

DK INGLEDEW & CH JACKSON, School of Psychology, University of Wales, Bangor
The purpose was to test, in rock climbers, a model whereby personality especially agreeableness and conscientiousness, would influence safety behaviour, which in turn would influence comparative optimism about climbing

mishaps. This was analogous to Ingledew & Brunning's (1999) model of personality, preventive health behaviour, and comparative optimism about health problems. Climbers (n=150) completed questionnaire measures of personality (five-factor), current safety behaviour, and comparative optimism about possible future mishaps. In structural equation modelling, agreeableness and conscientiousness had positive effects upon safety behaviour. However, safety behaviour had no significant effect upon comparative optimism. Rather, neuroticism had a negative effect and experience (current age minus age at which started climbing) had a positive effect upon comparative optimism. The findings are interpreted in terms of previous research highlighting agreeableness and conscientiousness as determinants of health behaviour, research into negative affectivity, and research identifying past exposure as a determinant of optimistic bias.

Does the inclusion of additional social norm variables to the TPB increase prediction of physical activity intention?

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The purpose of this study was to determine whether the variables of descriptive norm (DN), moral norm (MN), and self identity (SI) would account for additional variance in physical activity intention over and above that accounted for by the Theory of Planned Behaviour (TPB). A postal questionnaire was distributed to all staff (n=585) at a Higher Education College in the north of England. The questionnaire included items pertaining to TPB variables and also DN, MN and SI. 202 questionnaires were returned, a response rate of 35 per cent. A stepwise multiple regression analysis was administered. The TPB provided good predictions of intention ($R^2=0.38$), attitude, subjective norm and perceived behavioural control all significant). A further 10 per cent of the variance in physical activity intention was explained with the inclusion of the additional variables ($R^2=0.48$, DN, MN, SI all significant). Strategies to change individuals' DN, MN and SI might be included within physical activity interventions.

Effects of social support on anxiety at times of high and low stress

B JOHNS & Y DU CASSÉ, Dept of Psychology, Faculty of Health Care & Social Studies, University of Luton
The rationale for this study was the lack of research into the negative effects of social support. It used a cross sectional independent design with two factors: social support and hassles. Each participant was required to fill out a social support, hassles and S.T.A.I. questionnaire. Results of a two way ANOVA, although not significant, except for a main effects of hassles, suggested a damage effect at times of low stress and a buffering effect at times of high stress. Results suggest that those with high hassles use their support effectively to reduce stress. The type of support given is informational, as this is deemed more important. The damage effect found in those with low hassles can be best explained as caregivers turning away due to caregiver burnout after supporting the individual at a previous period of high stress. Students under stress should therefore be given lots of informational support.

What do first-year nurses worry about? An exploratory and confirmatory level analysis

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Purpose of study: To develop an adequate

measure of perceived sources of stress for first year student nurses, ie the Student Nurse Stress Index (SNSI).

Methods: the underlying factor structure of stressors perceived by first year student nurses, considering 35 items from the Beck and Srivastava Stress Inventory (Beck & Srivastava, 1991) and 15 new items, was compared between calibration (n=235) and independent validation samples (n=188). A range of demographic and affective outcome measures were presented for validation purposes.

Summary of results: A reliable 22 variable solution with simple oblique structure and 'Academic load', 'Clinical sources', 'Interface Worries' and 'Personal problems' factors was obtained, in calibration sample. Confirmation of this factor structure at an exploratory level revealed an identical structure in validation sample. Confirmatory factor analysis established the four factor model in the first sample, but required that three variables load onto more than one factor. This more complex four factor model was confirmed using independent data from validation sample, and in both data sets simultaneously using multi-sample techniques, and a range of fit indices.

Conclusions: The SNSI shows cross-sample factor congruence, good internal reliabilities, concurrent and discriminant validity across a range of reporting conditions.

Psychological, clinical and demographic predictors of early recovery from stroke

A KAPUR, M JOHNSTON, V MORRISON, R MacWALTER, B POLLARD, S JOICE & D BONETTI, Dept of Psychology, University of St Andrews

This study examined previously found psychological, clinical and demographic predictors of recovery from disability and distress following stroke, in this instance in the first two months following discharge from hospital. 80 stroke patients (48 male; mean age 68 years; 43 right motor deficit, 34 left motor deficit, 3 neither; 1st stroke for 62) were assessed at 2 weeks and 2 months post discharge on measures of disability (Barthel, FLP) and mood (HADS). Predictor variables were age, gender, carer present, side of lesion, first-versus-later stroke, perceived control (RLOC), coping (WOC), confidence in recovery, social support (SOS) and recovery baselines. Results found 2 month recovery from: (a) disability predicted by age ($r^2=5.3$ per cent), (b) anxiety predicted by disability at baseline ($r^2=7.8$ per cent), (c) depression predicted by carer present, side of motor deficit ($r^2=12.6$ per cent). This suggests short-term processes of recovery are influenced by other factors than in long-term recovery. Identification of whether these short-term predictors persist and/or decrease/increase in importance over longer follow-up is needed.

Coping effectiveness training for people with spinal cord injury: Preliminary results of a controlled trial

C KING, P KENNEDY & J DUFF, Dept of Clinical Psychology, National Spinal Injuries Centre, Stoke Mandeville Hospital, Bucks

Objectives: To develop and evaluate a brief group-based psychological intervention for improving psychological adjustment and enhancing adaptive coping following spinal cord injury. The Coping Effectiveness Training (CET) programme is grounded on the cognitive theory of stress and coping (Lazarus & Folkman, 1984) and represents an original adaptation of the theory to the needs of this client group.

Design: A controlled trial comparing patients receiving the CET intervention to matched controls in measures of psychological adjustment and coping was used.

Method: 19 intervention group participants and 19 matched controls were selected from inpatients at a hospital based spinal cord injury rehabilitation centre. Outcome measures of depression, anxiety and coping were collected

before, immediately after, and six weeks following the intervention.

Results: Intervention group participants showed significantly greater reductions in levels of depression ($p < .01$) and anxiety ($p < .05$) compared to matched controls immediately after the intervention and at six weeks follow-up.

There was no evidence of a significantly greater change in the coping strategies used by the intervention group. Participants highlighted their interactions with other group members as the most helpful aspect of the intervention.

Conclusions: This evidence suggests that the CET intervention facilitated a significant improvement in psychological adjustment to spinal cord injury. It is proposed this may be understood in terms of changes in participants' appraisal of the implications of spinal cord injury and of the coping skills needed to continue living meaningful and satisfying lives. Further groups are currently being run and the results will be made available at the time of the conference.

Smoking in teenage girls: an assessment of attitudes and the influence of family and peer smoking

NL LAW & CA HAYNES, Institute of Behavioural Sciences, University of Derby
The present study examines the influence of the smoking behaviour of family members and peers on the smoking behaviour of teenage girls.

Attitudes towards smoking are also examined across three age groups. 130 females from three age groups, 12/13 years, 15/16 years and 18/19 years, completed a smoking questionnaire. Significant differences in smoking behaviour were found across age groups, and indicate that the main period for transition from non-smoker to smoker occurs between the ages of 15/16 and 18/19. Examination of the influence of family and peer smoking indicated that having a father or older sister or best friend who smoked influenced smoking in teenage girls. The smoking behaviour of other family members was less important. Attitudes towards smoking were also found to vary across the age groups.

Innovation in primary care: A COPC approach

P LENIHAN & S ILIFFE, Dept of Primary Care & Population Sciences, UCL & Royal Free Medical Schools, London

Community-oriented Primary Care (COPC) is a health care development model necessitating co-ordination across a range of social and health agencies. It integrates public health with primary care and has a strong health promotion component. An interdisciplinary perspective on health in addition to well-developed communication, facilitation and research skills are fundamental to the success of this model.

Psychologists can contribute to all these areas, as well as providing expertise in managing innovation in service and promoting changes in health related behaviours. The Primary Care for Older People Project is a multi-disciplinary COPC project promoting the development of innovative primary care services for older people in selected inner London general practices. It is co-ordinated and supported by a general practitioner/reader in primary care and a counselling psychologist/research fellow from an academic dept of primary care. This presentation will outline the COPC model, present the Primary Care for Older People Project, and promote discussion around the role health psychologists can play in the future development of primary care.

Acute exercise and breakfast manipulations: Selective effects on cognitive performance

A LLUCH, P HUBERT, NA KING, L DYE & JE BLUNDELL, School of Psychology, University of Leeds

The effects of exercise and breakfast manipulations on cognitive performance were assessed in eleven healthy females, who were regular exercisers and habitual breakfast eaters. A 2 x 2 repeated measures design, with exercise (or

rest) and a high-energy breakfast (or low-energy breakfast) was employed. The exercise or rest session (8 am) was followed by consumption of a low or high-energy breakfast (9 am). A battery of cognitive performance tasks was completed two and a half hours after the beginning of the breakfast (i.e. 11.30 am). Subtle effects were seen on the cognitive performance tasks. They included a slight impairment on a free recall memory task (fast list) following exercise, independent of the type of breakfast, and impairment on a tapping task following exercise and low-energy breakfast only. In these healthy young adults, an acute energy deficit (induced by exercise and/or low-energy breakfast) had only slight effects on mental performance.

The effects of acute exercise on cognitive performance and mood

A LLUCH, S TAYLOR, N CALVEY, L DYE, NA KING & JE BLUNDELL, School of Psychology, University of Leeds

The effects of acute exercise on cognitive performance and mood were assessed in fourteen regularly exercising participants (eight males, six females). The study used a within subjects design. In the exercise condition, participants performed cognitive tests before and after running for 30 minutes at 70 per cent VO_{2max} (maximum aerobic capacity). In the rest condition, exercise was replaced by reading. Visual Analogue Scales were completed to assess mood. Results showed that exercise facilitated performance on a tapping task in all participants and reaction time in males only. On the complex cognitive tasks (e.g. Code Substitution, Simultaneous Pattern Comparison), the effects of exercise were mediated by sex and time. In both males and females, exercise increased positive mood states (happiness and energy), whereas rest increased negative mood states (irritability and lethargy). In conclusion, exercise had positive effects on mood in all participants whereas the effects on cognitive function were task and/or gender specific.

The influence of affective and instrumental beliefs and the moderating role of habit in predicting exercise intentions and behaviour

R LOWE, F EVES, D CARROLL & P CLARKE, Dept of Experimental Psychology, University of Bristol

Purpose: Programmes encouraging exercise may help reduce coronary illnesses. A useful model for understanding exercise intentions is Ajzen's Theory of Planned Behaviour. The current study examined (a) The role of instrumental and affective components of attitude towards the behaviour, with a related distinction being drawn between overall desires and intentions, and (b) the possible moderating influence of habit on the intention-behaviour association.

Method and results: 424 men and 572 women were recruited as part of a community-based study of exercise behaviour. 422 participants (42 per cent) provided 6 month follow-up data. In hierarchical regressions, the affective component of attitude contributed to both intention and desire, whereas the instrumental component did not. When past behaviour was included in the models of future behaviour, intention failed to predict behaviour in either habitual or non-habitual exercisers. Conversely, desire predicted participation in non-habitual exercise.

Conclusion: Affective rather than instrumental beliefs were the major contributors to exercise motivation. Intentional processes, specifically desires, predicted subsequent exercise when it was not habitual.

Aids knowledge and behaviour after school sex education

D MACKEN & Y DU CASSÉ, University of Luton

Despite support for school Sex Education there is little empirical evidence about its effects on HIV

and AIDS knowledge or sexual behaviour towards safer sex. This study considers differences in the type of delivery in school Sex Education between Independent and maintained schools, and the effects of specific intervention techniques in 16-19-year-old students. The study indicates fairly high levels of knowledge about HIV and AIDS but low changes in behavioural intentions. Our findings have also identified the factors of peer pressure and sources of information which are discussed in terms of behavioural intentions. Alternative consideration is also given to models such as the Health Belief Model, Theory of Reasoned Action and the Theory of Planned Behaviour, and their possible relevance to the assessment and development of cognitively based theoretical intervention techniques.

Assessment of long-term psychological outcome after intensive care

J PERRINS MACLEAN, School of Health Care Studies, University of Leeds

Purpose of study: The aim of this research has been the examination of the long-term psychological consequences of admission to the Intensive Care Unit. Major objectives have included psychometric assessment at specified intervals post-discharge, and identification of ICU related variables which might influence emotional well-being and recovery.

Design and methodology: A prospective study using survey methods. Data have been collected at three points post-discharge using three validated psychometric assessments: the GHQ28, Rosenberg SES and IOES. Analysis via multivariate techniques including multiple regression.

Conclusion: Exploratory analysis has produced evidence of discrimination between subgroups with regard to recovery and psychological well-being. Important subgroups include different illness groups, mode of admission to ICU, social support and amount of recall. Further analysis via multiple regression is currently in progress.

Significance: The study of post-ICU psychology and quality of life is a burgeoning research area. This work expands previous research into critical illness psychology by taking a longitudinal approach, and may indicate that intervention during the ICU stay could positively influence long-term outcome for survivors. Current emphasis on evidence based practice and outcome measures make this a timely evaluation study.

Cognitions, behaviour, distress and pain in temporomandibular disorder and primary headache

G MADLAND, C FEINMANN & S NEWMAN, Health Psychology Unit, Dept of Psychiatry & Behavioural Sciences, Royal Free & University College Medical School, London

This study is investigated relations between cognitive and behavioural factors and symptom report in painful temporomandibular disorder (TMD) and primary headache (migraine and tension-type). TMD and headache patients were recruited from new referrals to Oral & Maxillofacial Surgery and Neurology outpatient depts respectively, and invited to complete a questionnaire including: age, gender and demographic details; the Illness Perception Questionnaire; the Coping Strategies Questionnaire; the short-form McGill Pain Questionnaire; the Hospital Anxiety and Depression scale; the Perceived Stress Scale; the State-Trait Anger Expression Inventory; and the Toronto Alexithymia Scale. Mean scores were compared between the pain groups; factor analysis used to confirm the internal structure of the scales; a correlation matrix determined relations between variables; and regression equations established the amount of variance predicted by factors. The identification of maladaptive illness perceptions and coping strategies, as potential targets for therapy, is discussed.

The effects of stress and social support on learning strategies

I McMURRAY & Y DU CASSÉ, Psychology Dept, University of Luton

The purpose of this study was to examine the effect of self reported stress, perceived amount of social support and social support satisfaction on learning strategies. A cohort of 53 Psychology undergraduate students volunteered to complete the State Anxiety Inventory, Sarason Social Support Questionnaire (SSQ6) and Biggs' Study Process questionnaire. Three two factor mixed design ANOVA's were applied to analyse the data. The results showed that all students were under stress but found no significant interaction between the level of stress and the learning strategies used. Significant interactions were found between social support amount and learning strategies. Increases in perceived amount of support produced a deeper learning approach. Similarly there was a significant interaction between social support satisfaction with learning strategies. Higher social support satisfaction equated to a deeper learning style. The positive effect of social support is discussed along with importance of personality characteristics, learning context and metacognitive learning processes in influencing learning approaches.

An investigation into the disinhibitory effects of dietary lapses, dietary restraint and guilt on subsequent dietary behaviour

CL McNALLY, J OGDEN, ST McNALLY & SP NEWMAN, Dept of Psychiatry and Behavioural Sciences, UCLMS, London

Purpose: To investigate the effects of actual dietary lapses and mood reactions on subsequent dietary behaviour among individuals of different levels of restraint.

Method: A prospective design utilised 152 diet club members who were split into two groups according to whether or not they broke their pre-set dietary boundaries on day six of a seven day self monitoring period. The effect of lapses, self-reported guilt and level of dietary restraint on dietary behaviour was examined.

Results: No significant main effects were found. A significant dietary lapse X restraint interaction was revealed, with a broken dietary boundary on day six leading to poorer dietary success on day seven, but only among participants low in dietary restraint. This remained after controlling for baseline dietary behaviour, intentions, and previous experience.

Conclusion: Vulnerability to disinhibition following a dietary lapse may be greatest among individuals exhibiting a moderate rather than high level of dietary restraint.

The short-term effects of patient behavioural decline on carers' psychological well-being; symptom reports; blood pressure and neuroendocrine functioning

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Purpose: To investigate the short term impact of fluctuations in chronically-ill patients' condition on carers psychological and physical well-being using salivary cortisol as a measure of stress in a 'real life' setting.

Methods: 66 carers of chronically ill spouses were prospectively assessed in two structured home interviews five weeks apart. Carers' psychological well-being (CES-D), physical symptoms and blood pressure as well as their partners' current level of behavioural problems (CAPE) were assessed. Participants collect four saliva samples on the day after each interview.

Results: Participants were divided into two groups depending upon whether or not their partner had declined behaviourally at time 2. ANCOVA (controlling for baseline scores)

revealed significant effects of group on changes in CES-D; symptoms and cortisol. Blood pressure did not differ between the two groups. **Conclusions:** Results indicate that even short term fluctuations in the behavioural status of chronically-ill individuals may impact on their carers.

Breaking bad news: Identifying experiences and needs of health professionals

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Health professionals need to receive further training in communicating distressing information to patients. Potential benefits are increased patient satisfaction, reduced distress, and complaints, and increased confidence/self-efficacy amongst health professionals. We shall be evaluating a breaking bad news training in autumn. Results here present findings of a pre-study conducted to inform this training and its evaluation. Fourteen health professionals (seven sr./jr. medical staff; seven sr./jr. nursing staff) were interviewed. None believed doctors or nurses were well trained in communicating bad news; 12 believed they could do better. Emotions reported included anxiety in delivering bad news (10); embarrassment if a patient got emotional (6); high stress when giving serious diagnoses (12), sleep loss before or after delivery of news (8) and all worried about the impact of the news on the patient/family. Six believed they lacked confidence, seven believed they lacked time, and eight believed they lacked the necessary skills. These results, and differences between medical and nursing staff are illustrated using qualitative material gathered from taped interviews. Implications for training protocols that enhance self-efficacy within a Banduran framework are discussed.

A systematic review of the impact of psycho-educational interventions on arthritis symptoms

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Background: Psychoeducational interventions for individuals with arthritis have been found to have some beneficial effect. However, which components of these complex interventions are the most important to the success of the programme is not known.

Method: A systematic review of interventions with osteoarthritis and rheumatoid arthritis patients identified 56 studies which measured pain, tender joint count, stiffness or fatigue. The different components were identified and the association of each component with changes in symptoms was assessed.

Results: No single component was consistently associated with positive outcomes. There was a trend for exercise programmes and interventions which included cognitive coping strategies or reappraisal of negative thoughts to have most effect on pain. Little effect was found on stiffness or fatigue.

Conclusion: This systematic review indicates a modest contribution of these interventions on the symptoms of arthritis. Certain components appear to be more beneficial and should be included in any planned intervention.

Predicting attendance at a prostate cancer screening clinic: An application of protection motivation theory

GA MUNLEY & GJ MILSON, Dept of Psychology & Speech Pathology, The Manchester Metropolitan University
Recent research by Orbell and Sheeran (1998) has demonstrated the usefulness of Protection Motivation Theory (PMT) for the prediction of attendance at cervical screening. This study examined the predictive utility of PMT in the context of prostate cancer screening. Seventy-six

men aged between 65 and 80 years completed questionnaires measuring PMT variables. Men were also asked if they would be willing to take part in a screening programme using the Prostate Specific Antigen (PSA) blood test. Sixty-seven per cent of men indicated a willingness to take part in the programme and all of those subsequently attended a GP clinic for the test to be conducted. Logistic regression of attendance onto PMT variables revealed little predictive utility overall for the model in this context. Only one aspect of the PMT model, response efficacy, proved a significant predictor of attendance for screening.

Social-environmental influences on adherence and glycaemic control in diabetes mellitus

DJ MURPHY & S THORN, Dept of Clinical Psychology, Charing Cross Hospital, London

Adherence to a self-management regime is related to reduced risk of long term health complications in diabetes mellitus. The current study examined the influence of diabetes-specific social support on adherence and glycaemic control. Ninety-four patients with insulin-requiring diabetes attending a routine hospital clinic completed measures of diabetes-knowledge, adherence, mood, and both general and diabetes-specific social support. Blood samples were taken to obtain a measure of glycaemic control (HBA1c). Higher levels of diabetes knowledge were related to higher levels of diabetes-specific social support which, in turn, were related to higher levels of adherence. Depression was independently related to poorer adherence. General social support was related to mood but not to adherence. However glycaemic control was not related to diabetes knowledge, specific social support or adherence. This study suggests that the social environment of an individual with diabetes may be an important influence on their adherence to a self-management regime.

Is the cope scale a valid and reliable measure of coping for a community sample of people with multiple sclerosis?

L O'HARA, Health Studies, Brunel University, Isleworth, Middlesex

Purpose: The aim of the study was to assess the validity and reliability of the COPE for a community population of people with multiple sclerosis (MS).

Method: This postal survey was conducted, at the Centre for Research in Rehabilitation, Brunel University, London, from August 1997 until August 1998. The respondent sample comprised 201 volunteers with confirmed MS, living in the community.

Results: All of the COPE scales met a priori criterion for test-re-test reliability (ICC=.6) and thematic analysis of an open question on coping indicated the COPE had good content validity. However, 4 of the scales did not meet a priori criterion for scale consistency (Cronbach's Alpha=.7) and 9 scales had poor criterion validity. Confirmatory factor analysis also revealed that the factor structure proposed by the authors was not replicated in this sample (Chi Square 388.021, df=90, p < .001).

Conclusion: Findings indicate that the COPE was neither valid or reliable for a community population of people with MS.

Preliminary empirical evaluation of a modified version of the Sickness Impact Profile (SIP)

B POLLARD & M JOHNSTON, School of Psychology, University of St Andrews

Our theoretical analysis of the scaling techniques and items used in the SIP resolved many previously noted problems with the SIP. A new scoring method consistent with the underlying scaling method and items was suggested, but needed empirical evaluation. 277 patients with chronic conditions in one cross-sectional and two longitudinal studies were assessed using the SIP, Barthel, Observer-rated disability and OPCS

criteria. Cronbach's alpha for the new and old scoring methods were comparable ($=0.85$ v 0.87). High correlations were found between the SIP and other disability measures for both scoring methods. Sensitivity to change appeared greater using the new scoring. These preliminary results indicate that the reliability, validity and sensitivity of the theoretically modified SIP is as good as the original SIP. A further modified version can now be implemented that will be quicker and easier to administer and reduces the number of items especially for those with greatest limitation.

Which behaviours constitute 'having had sex' in the UK?

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The aim of this study was to establish which behaviours are considered to constitute sexual relations. An opportunistic sample of 314 UK undergraduates completed a short questionnaire. The sample comprised 190 females, 124 males, most were white and heterosexual. The dependent measure was percentage of respondents believing different behaviours to constitute 'having had sex'. The majority of respondents regarded 'having sex' as involving penile-vaginal and penile-anal intercourse. Approximately a third of respondents regarded oral-genital contact as 'having sex' whilst around 17 per cent regarded manual touching of genitals. There were significant gender and age differences in responses. These findings broadly support those of an earlier US study. It is clear that British students hold widely divergent opinions about which behaviours constitute 'having sex'. Any studies of sexual behaviour need to specify which behaviours are encompassed by the definitional terms used and consider the gender and age related effects established here.

Social psychological determinants of motivation to provide emotional support and practical care to parents: Augmenting the theory of planned behaviour

P RAPAPORT & S ORBELL, Dept of Psychology, University of Sheffield

Surveys suggest that the highest proportion of people receiving informal care are parents (Green, 1988), yet psychological studies of motivation to care for parents are limited. The present research aimed to extend understanding of motivation by examining social psychological determinants of motivation to provide practical care and emotional support to parents. The study was a community based survey of 300 45- to 65-year-old men and women examining participants' intentions to provide practical care and emotional support to their parents within the framework of the theory of planned behaviour (Ajzen, 1985), including additional measures of anticipated regret. Preliminary analyses suggest that intentions to perform both behaviours were partially predicted by the theory of planned behaviour constructs and that anticipated regret substantially improved the prediction of both types of behavioural intentions. These findings confirm that providing practical care and emotional support are motivated behaviours governed by both rational and emotional factors. Reinforcing the need to incorporate a specifically affective component into existing models of social cognition.

Experience of cancer in the family and psychosocial aspects of increased risk: Theoretical perspectives

G REES, A FRY & A CULL, Clinical Psychology, Western General Hospital, Edinburgh

Women at increased risk of developing breast cancer due to their family face a number of uncertainties. Personal cancer risk estimates are imprecise and the efficacy of preventive measures and screening in younger women

remains unproved. It is therefore not surprising that adverse psychosocial outcomes have been described within this population. Research attempting to predict the incidence of distress and dysfunction has been largely a-theoretical, and has consequently overlooked a number of theoretically important variables. One factor, neglected in research to date is the subjective experience of cancer in the family. This poster discusses the potential role of subjective experience from three theoretical perspectives in health psychology: models of behaviour change; risk perception and decision-making; illness representations. A number of aspects of experience which appear theoretically consistent are highlighted. Systematic research in this area improve predictions of outcome of cancer genetic counselling and inform the clinical process.

Parental reactions to their child being on the waiting list for a severe allergy clinic

C REGAN, Dept of Psychology, University of Southampton

Purpose: (1) to monitor anxiety levels of parents across time in relation to their child's appointment at a severe allergy clinic; (2) to explore the impact of a telephone intervention on a random selection of parents. The intervention group receives a phone call prior to the appointment during which information about their concerns and expectations is obtained. This is passed on to the clinic staff to act as a prompt, if necessary, during the appointment. It is hypothesised that this may reduce anxiety during the waiting time. Data is being collected from each participant at three time points over an eight-week period using: Spielberger's State Trait Anxiety Inventory; Multi-Dimensional Health Locus of Control; Hatcher *et al.* Pre and Post Visit Questionnaires. It is hoped that this study will contribute to increased consumer satisfaction within the clinic which in turn may lead to better health outcomes for the children attending.

Important life domains, future life transitions and meaning of life

S REID, JF GOLDING, R ROBERTS, K PHILLIPS & A TOWELL, Dept of Psychology, Univ. of Westminster, London

Objective: Meaning in life is central to well-being. We investigated the five most important domains of people's lives and the extent to which each provides life with meaning, in addition to investigating future meaningful life transitions.

Method: Semi-structured interviews were conducted with 44 undergraduates. Responses to open-ended questions about important life domains and future meaningful transitions were coded by the interviewer.

Results: Respondents were most likely to mention family/partner as the most important domain of their lives, followed by own health, education, personal development, and friends. Generally, all five domains were sources of significant life meaning. Graduation was the most frequently mentioned future meaningful life transition, followed by starting a family.

Conclusion: Results suggest that people's most important life domains are framed by meaning, which may be adaptive for well-being, and that judgements about future meaningful life transitions are influenced by the meaningfulness of current important life domains.

Protocol for systematic review predicting activity limitation in patients recovering from injury

C SCHRÖDER, P McGOLDRICK, M JOHNSTON, N van MEETEREN, University Hospital Utrecht, Centre for Rehabilitation and Nutritional Sciences, Utrecht

Background: Medical variables have limited success in predicting individual differences in recovery from injury of the lower limb.

Aim: The aim is to develop and pilot a protocol for a systematic review that can evaluate the contribution of cognitive and emotional variables in explaining activity limitation in patient recovery.

Methods: A literature search, following the

Cochrane guidelines, was done using five electronic databases. Ten studies using at least one measure of activity limitation as an outcome were selected based on criteria, e.g. population, age, sample size, nature of injury, measures of impairment, emotion, cognition and activity limitation. Two reviewers systematically and independently extracted information.

Results: The main cognitive variables identified were self-efficacy, illness cognitions, and self-motivation. The emotional variables identified were anxiety; distress; depression; emotional role functioning, positive and negative affect. Impairment variables were impairment due to hip, knee replacement, fracture, joint function, pain. The activity limitation investigated, was mobility as measured by self-report or observational measures. **Conclusions:** Initial work demonstrates that a valid/useful protocol has been developed. This review should enable us to establish if cognitive and emotional variables are of equivalent importance to medical variables in predicting recovery from injury.

Genetic versus non-genetic diagnosis of familial hypercholesterolaemia (FH): A randomised controlled trial

V SENIOR & T MARTEAU, on behalf of the GRAFT study group, Psychology and Genetics Research Group, Thomas Guy House, London

Aim: To determine the psychological consequences of a diagnosis of familial hypercholesterolaemia (FH) made using genetic testing.

Method: Families are randomised to one of two methods of diagnosing FH; (a) The method used in current clinical practice for making the diagnosis, that of cholesterol tests, taking a family history, and clinical examination; (b) Current clinical practice together with genetic testing for FH. Participants include both people previously diagnosed with FH who are attending a lipid clinic ($n=460$) and their first and second-degree relatives ($n=552$).

Results: The two main hypotheses, based on previous studies, are: Using genetic tests to diagnose FH, compared with non-genetic tests, results in: I Lower perceived preventability of FH and heart disease; and II Lower adherence to risk-reducing behaviour (e.g. diet, smoking, exercise, and adherence to medication).

Discussion: The psychological background and trial methodology will be presented. Recruitment began in October 1998 and the main findings are expected in October 2001.

'Holding me back. Keeping me down'. The experiences of adolescents with juvenile idiopathic arthritis

K SHAW, Psychosocial Rheumatology Research Centre, School of Health & Social Sciences, Coventry University

Background: Juvenile Idiopathic Arthritis (JIA) represents one of the most common causes of physical disability. Many of the difficulties associated with JIA appear to increase during adolescence. Addressing this, the present study aims to explore the impact of JIA in the context of adolescence.

Method: The study adopted a qualitative approach. Employing a cross-sectional design, data were collected by self-administered postal questionnaires and semi-structured interviews. The sample ($n=39$) comprised 62 per cent young women, mean age of 14.96 ($SD=2.10$) years and a mean disease duration of 7.62 ($SD=4.6$) years. **Results:** JIA was reported to impact upon every aspect of young people's lives. Key issues concerned aspects of identity, independence, social inclusion, education and vocation. Adolescents were particularly concerned about the lack of support available to them.

Conclusion: Young people with JIA face considerable barriers in their transition to adulthood and whilst inextricably linked to disease activity, JIA is largely expressed in psychosocial terms.

Bank staff experiences of peer and clinician facilitated critical incident stress debriefing following armed robberies

R SIMMS-ELLIS & A MADILL, School of Psychology, University of Leeds

Bank employees are at considerable health risk as they are vulnerable to armed raids and hostage situations. Critical Incident Stress Debriefing (CISD) for those exposed to traumatic work incidents seeks to minimise their impact and accelerate recovery. Currently contested are CISD's efficacy and whether clinicians or organisation employees should facilitate CISDs. Few qualitative studies of the experience of CISD exist, however understanding the impact on employees would aid service development for those in high-risk occupations. The present study used grounded theory to investigate four bank employees' experience of clinician and peer-led CISDs. Despite ambivalence, participants did advocate the benefits of CISDs. Peer debriefing was preferred and was associated with safety, comfort, and normalisation. In contrast, clinicians aroused threat, non-acceptance, and were perceived to pathologise the participants' experience. Major themes include psychological reactance, deference, talking, rejection of professionalism, and organisational acknowledgement of the trauma. These results are discussed in relation to violation of adult norms, attachment, and social identity theory.

The effect of situational and psychosocial factors on high risk sexual behaviours of university students

S SMITH, M PITTS & Q RAHMAN, Psychology Dept, University of Central Lancashire, Preston

Students, as a group, expose themselves to high rates of STD infection via their risky sexual behaviours. In addition to psychosocial factors, such as beliefs, knowledge and LOC, this study examined the effects of situational variables on high-risk behaviours of students in the North of England. Situational variables of particular interest were (a) where students live (student accommodation, halls, student houses, parental home, privately rented accommodation), (b) with whom students live (other students, parents, partner), (c) time away from parental home. It was predicted that first year students living away from the parental home for the first time, in student accommodation, might display a situation-dependent disinhibitory effect, engaging in more sexual encounters, having more sexual partners, and using alcohol as an accompaniment to sexual activities, to a greater extent than their third year counterparts, who tend to live in privately rented accommodation, or with a partner. These predictions were confirmed. Implications for sexual health education programmes targeted specifically at first year students are discussed.

Impact of positively- vs negatively-worded items on the factor structure of three psychosocial measures: W-BQ22, W-BQ12 & HADS

J SPEIGHT, S BARENDSE & C BRADLEY, Health Psychology Research, Dept of Psychology, Royal Holloway University of London, Surrey

Background: The 22-item Well-being Questionnaire (W-BQ22) (Bradley, 1994) includes Anxiety Depression, Energy and Positive Well-being subscales. W-BQ12 resolves overlap problems with depression/anxiety items in W-BQ22 structure. The Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) successfully differentiated between depression and anxiety.

Method: Factor structures of W-BQ22, W-BQ12 and HADS were compared in responses from 789 outpatients with diabetes.

Results: W-BQ22 factor analysis showed

negatively-worded depression and anxiety items loading together, separately from positively-worded items. W-BQ12 showed 3 intended factors: Positive Well-being, Energy and Negative Well-being (negatively-worded depression/anxiety items loading together). Analysis of HADS showed 2 factors, depression and anxiety, which can also be defined in terms of wording: positive (5/7 depression items) or negative (6/7 anxiety items).

Conclusion: The ability of the HADS to differentiate depression and anxiety may be an artefact of wording, which was more influential than depression/anxiety constructs in determining structure in W-BQ22.

The W-BQ28: further development of the well-being questionnaire to include diabetes-specific as well as generic subscales and new stress subscales

J SPEIGHT, S BARENDSE & C BRADLEY, Health Psychology Research, Dept of Psychology, Royal Holloway, University of London, Surrey

Background: The 12-item Well-being Questionnaire (W-BQ12) was designed to be suitable for people with diabetes, though is not diabetes-specific. The W-BQ12 provides subscales measuring Negative Well-being, Energy and Positive Well-being that minimise confounding of mood with diabetes control. Recent research and clinical experience have highlighted a need for stress items and diabetes-specific subscales to identify people depressed/anxious/stressed about their diabetes but not generally depressed/anxious/stressed.

Method: An extended 64-item questionnaire, including new stress items and diabetes-specific items, was investigated using data from 789 outpatients with diabetes. Factor and reliability analyses on treatment subgroups and total samples guided item-selection.

Results: Seven 4-item subscales were identified: generic Positive Well-being, Negative Well-being, Energy and Stress, and Diabetes-Specific Positive Well-being, Negative Well-being and Stress. Internal reliabilities for all subscales were excellent (alpha coefficients: 0.80 to 0.87).

Conclusion: The W-BQ28 has good factor structure and is a reliable measure of generic and diabetes-specific well-being.

The impact of self-management interventions on glycemic control in Type 2 diabetes: A systematic review

L STEED, D COOKE & SP NEWMAN, Dept of Psychiatry & Behavioural Sciences, UCLMS, London

Background: Self-management programmes have been shown to have beneficial effects on glycemic control. However, these programmes vary widely in content, and it is not clear which components produce beneficial effects.

Methods: A systematic review of programmes was undertaken focussing on type 2 patients, with glycemic control as the outcome measure. Medline/Psychlit and Embase were searched from 1976-1997 along with manual searching of reference lists. Thirty-four studies met inclusion/exclusion criteria and were coded by two separate reviewers showing a high level of agreement, kappa coefficient of 0.89.

Results: Analysis indicated that problem solving and practical skills training were of most benefit, while relaxation and biofeedback were of limited utility.

Conclusions: Certain aspects of self-management may be more useful to include in interventions than others. The implications of this together with methodological issues for future studies will be presented.

A smoking prevention intervention in adolescents

A STEPHENS & M CONNER, School of Psychology, University of Leeds

Most people start smoking in adolescence, and action to reduce smoking amongst teenagers is essential to prevent the detrimental long term consequences of smoking on health. Based on the Theory of Planned Behaviour (TPB) a preventative intervention was designed and tested in a pilot study involving 293 children in year 7 (11 and 12-years-old), in Leeds secondary schools. Through self-report questionnaires the children's smoking behaviour was measured along with other variables of the TPB at the beginning of the study and again eight weeks later. With the questionnaire all of the children received information against smoking and then a task to complete. The task they had to complete involved either forming an implementation intention about how, where and when they could resist smoking, or in the control condition how, where and when they could finish all their work at school. In the implementation intention condition none of the 62 children who had never smoked went on to try smoking, whereas in the control condition four of the 58 children who had never tried smoking went on to try or take up smoking during the eight weeks of this study. These are promising findings for the use of implementation intentions in prevention of adolescent smoking and is an area which deserves more attention in the future.

Health care professionals' perceptions of cancer: A preliminary study

D STEWART, Dept of Psychology, University of Luton

Cancer remains a highly stigmatised disease. It is traditionally associated with fears of a premature death, pain, suffering and disability. Unfortunately some of the beliefs and thoughts of others towards the condition can have negative implications for the patient: for example, the diagnosis can sometimes elicit reactions of fear and avoidance in relatives. A few studies have also indicated that negative attitudes may affect the quality of interaction and intervention by health professionals, although there is little empirical work here. In preparation for a larger project, the Cancer Attitude Inventory (Berenberg, 1991) was completed by a class of Master's Health Psychology students (n=25). They had a generally positive attitude – the results being comparable to earlier norms. In an evaluation of the questionnaire the group proposed a number of mainly minor changes to items. The most important suggestion made was the additional need to assess fully future respondent's experiences of cancer.

Social representations of health from health professionals

S TAYLOR & S MUNCER, School of Health, University of Teesside, Middlesbrough

The authors focus on explanations of health and illness from health professionals. Taking as their starting point previous work which has used factor analysis to reveal lay perceptions of health and illness (Furnham, 1994), they presented health professionals with those factors which were perceived as important for health. The health professionals were given the causes arranged in a grid and were asked to indicate the perceived strength of the link between each of the putative causes. They were also asked to indicate the strength of the link between each cause and a person's health. The data were then network analysed (Lunt, 1985; Muncer & Gillen, 1997) to reveal a rich and complex representation of the causal links between factors that effect health. This representation is compared and contrasted with lay perceptions and the effect of strength of religious belief and belief in alternative medicine on the representation is also investigated.

Extending the theory of planned behaviour: The role of past behaviour and of social influence in predicting intentions to exercise and exercise behaviour

M THOMPSON & J RISE, Worcester

The purpose of the study was to examine the implications of including past behaviour in the theory of planned behaviour (TPB) and of reconceptualising the model's normative component in terms of self-identity and social identity. These issues were investigated in relation to regular exercise behaviour. Measures of intention, attitude, subjective norm, perceived behavioural control, past exercise behaviour, self-identity, group norm and group identity were collected from 232 college students. Measures of reported exercise behaviour were obtained two weeks later. Results found past behaviour and self-identity to influence intentions to exercise beyond the components of the TPB. The effects of self-identity were moderated by past behaviour. Group norm also predicted intentions, but only in individuals who identified strongly with a relevant reference group. It is concluded that when applied to repetitive health behaviours, the predictive power of the TPB will improve by including measures of identity and past behaviour.

Factors related to childrens' dental anxiety development

E TOWNEND & G DIMIGEN, Dept of Psychology, University of Southampton, and Dept of Psychology, University of Glasgow

The development of child dental anxiety was studied using Rachman's three pathways theory (conditioning, vicarious and informational pathways). Sixty new child patients attending a paediatric consultation clinic for specialised dental treatment participated. Information regarding past experiences and present level of anxiety was obtained from the examining dentist, the child and his/her parent. Mothers were also interviewed and observed to ascertain their own anxieties and behaviour. Thirty-one children were diagnosed as being clinically anxious regarding dentistry and 29 were found to be non anxious. Of Rachman's three pathways to fear, the results showed that conditioning appeared largely responsible for fear development. Children's fear was more strongly associated with subjective experience of pain and trauma than with objective dental pathology and a role for past dentists empathy was supported. Indirect learning processes were found to be of only minor importance. Recommendations are made for the use of psychology in paediatric dentistry.

Osteoarthritis, health-related quality of life and self-esteem among former professional footballers

AP TURNER, JH BARLOW & C HEATHCOTE-ELLIOT, Psychosocial Rheumatology Research Centre, Coventry University

Objective: The aim of this exploratory study was to compare self-esteem among former professional footballers with and without OA and to investigate the relationship between self-esteem and health-related quality of life.

Method: Self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSE) and health-related quality of life using the EuroQol (EQ-5D). 175 former professional footballers completed the RSE and EQ-5D via a self-administered postal survey.

Results: Eighty-one (46 per cent) respondents reported having OA in at least one joint. No significant difference was found between respondents with and without OA with regards to self-esteem, 31.9 (SD 5.7) and 32.3 (SD 4.2) respectively. Correlations between RSE and EQ-5D were stronger for respondents with OA compared to those without OA (.57, .43, respectively, both $p < .0005$). Discussion: Low self-esteem was not evident among former professional footballers with OA. Positive correlation between RSE and EQ-5D suggest

that self esteem may have a role to play in moderating the effects of OA.

Quality of life in diabetic renal disease: Comparison of generic vs condition specific measures

L VILEIKYTE, T APOSTOLOU, B TOMENSEN, CE BUNDY, R GOKAL & AJM BOULTON, Manchester Royal Infirmary

In the few previous studies assessing quality of life (QoL) in diabetic nephropathy, generic measures were invariably used, but there is an interest in determining whether condition-specific measures are more able to detect subtle variations in QoL.

Aims: to compare the performance of a generic scale (SF 36) with a condition-specific scale of known validity (Renal Quality of Life Profile, RQLP).

Methods: Four age-matched groups were studied: group A (n=19): diabetic patients on peritoneal dialysis (CAPD); group B (n=26): non-diabetic patients on CAPD; group C (n=20): diabetic patients with renal transplants, and group D (n=20): diabetic patients with impaired renal function. No differences in other complications or co-morbidities were observed across the diabetic groups. The worst QoL was reported in CAPD patients on some SF 36 and most RQLP domains, compared to groups C & D: e.g., SF 36, social functioning: $p < 0.05$; RQLP, eating/fluid intake: $p < 0.001$. Diabetic patients on CAPD had worse QoL compared with non-diabetic CAPD patients, e.g., RQLP, leisure domain: $p < 0.05$. QoL of transplant patients was as good as that in group D patients. The subscales of the two measures were variably correlated with each other (range $r = -0.04$ to 0.67), indicating only modest degree of overlap, and RQLP discriminated better between the groups.

Conclusions: this first study comparing measures in renal patients confirms that each examines QoL from differing but complimentary perspectives, supporting their use in combination.

'Lots of people do it, and it won't kill you': Descriptions of adolescents' views on drug taking and risk

MA WALLACE-BELL, J SIGGER & I ANASTASIOU, Psychology Academic Group, Middlesex University

This paper discusses themes emerging against the backdrop of the 'Normalisation' hypothesis of drug use for young persons. Eighty young people in school year groups 9 and 10 (13- to 15-years-old), completed free and fixed sorting tasks of 15 illegal and illicit drugs followed by interview. Amongst themes employed in the free-sorts were danger and harmfulness, familiarity, availability, legality and method of taking. Risk was constructed as catastrophic danger, probabilistic danger, and legalised availability. Alcohol and tobacco were overwhelmingly expected to be taken. Heroin, Ecstasy and Crack were to be avoided. Interviews revealed that most students (abstainers and users) viewed drug use as being a matter of choice and a normalised behaviour for their age group. Valuable information were also reported for drug education: students preferred to be told more about drugs than the 'just say no' message and favoured out of school agencies.

Manifestations of chaos and control in the life experiences of eating disordered individuals; exploration through qualitative e-mail discourse

AK WICKSTEED, Sheffield, South Yorkshire

This presentation considers how eating disordered individuals relate their experiences within the framework of the two themes of chaos and control. Existing research and literature within the field of eating disorders identifies areas which, individually, can be considered facets of these general themes. There however remains sparse work which actually considers the

connecting factors between these areas. The treatment implications of the emerging sub-themes of limited autonomy and identified are considered. Through qualitative data from oral and e-mail discourse, the ways in which sufferers and survivors employ these themes in describing their experiences are explored. The use of e-mail discourse represents a recent development within qualitative research. Subjects were voluntary respondents to a bulletin posted on an eating disorders web site, and a non-coercive policy was followed regarding the extent of their contribution. The degree of intentionality, opportunity for asynchronous communication, and potential for anonymity offered by this method are considered to facilitate empowerment of the respondents' position.

Work disability and ankylosing spondylitis in the UK

B WILLIAMS, C WRIGHT, S WRIGHT, M BARLOW, A KEAT & JH BARLOW, Psychosocial Rheumatology Research Centre, Coventry University

Purpose: To compare physical and psychological well-being across groups of people with Ankylosing Spondylitis (AS): employed full-time (F/T); unable to work because of their AS.

Method: Data were collected by self-administered postal questionnaires (n=91). 64 respondents were currently employed (53 full-time; 11 part-time) and 27 were unable to work because of their AS. 80 per cent were men with a mean age of 46 years and mean disease duration of 26 years.

Results: Of the 53 respondents currently in F/T employment, 20 had changed the nature of their work and 2 experienced promotion barriers. Compared to respondents in F/T employment, those unable to work because of their AS were: older ($p = .003$); experienced greater pain ($p < .001$), fatigue ($p = .01$), and stiffness ($p < .0007$); had poorer physical functioning ($p < .00005$); greater anxiety ($p < .02$), depression ($p < .001$); and lower self-esteem ($p < .01$).

Conclusion: With respect to physical and psychological well-being, respondents unable to work because of their condition were more adversely affected than their counterparts in F/T employment.

Examining the uptake of four evidence-based practice recommendations in the UK – why do some units have more success than others? Findings from Leeds University Maternity Audit Project (LUMAP)

B WILSON, J HEWISON, JG THORNTON, D BRAUNHOLTZ, RJ LILFORD, M ROBINSON & I WATT, Centre for Health Services Research, University of Leeds

Objective: To assess uptake of four evidence based practice (EBP) recommendations in 20 obstetric units in the UK; to identify remediable blocks to the implementation of EBP.

Design: Semi-structured interviews with senior staff. Clinical audit of four EBP recommendations.

Main outcome measures: Compliance with EBP recommendations in 1988 and 1996. Attitude towards recommendations. Factors, including organisational and inter-professional, acting as aid/barrier to implementation.

Results: Compliance with each recommendation increased between 1988 and 1996 but still fell short of 100 per cent. Interviewees, with two exceptions, fully endorsed the steroids recommendation; were slightly more equivocal towards both the suture and antibiotics recommendations and showed least support for the ventouse recommendation. Preliminary findings indicate level of organisational planning and self reported degree of multi-disciplinary working as factors influencing uptake.

Conclusion: Overall, uptake of EBP recommendations has markedly increased between 1988 and 1996, although there continues to be wide variation in uptake of certain

recommendations and within certain units. This appears associated not only with attitude towards the recommendation, but also the unit's degree of 'planfulness' and level of individual control reported by clinical team members in helping instigate/propagate the desired behaviour.

Familial breast cancer: Psychological impact of screening – a pilot study

SJ WRIGHT, JH BARLOW, T McWALLIS,
T COLES & P BARKER, Psychosocial
Rheumatology Research Centre, Coventry
University

Purpose: To investigate the psychological impact of familial breast cancer screening among a group of asymptomatic women.

Method: Semi-structured interviews were conducted with 12 women who had recently completed a risk assessment. Topics included: psychological impact, risk perceptions and informational needs.

Results: For some women, confronting or uncovering their family history triggered negative emotions, and just talking about breast cancer engendered feelings of fear and anxiety. This was mirrored by the impact upon relatives when asked for their help, making accurate information difficult to obtain. For other women, the assessment was viewed as a positive experience, reducing anxiety by providing reassuring information and putting the risk of

breast cancer into perspective.

Conclusion: Familial breast cancer screening provides reassurance for some women, but induces additional anxiety and fears for others. Further investigation is needed to develop a service that is a positive experience for all women.

The transplant effects questionnaire: The development of a new questionnaire for assessing the multidimensional outcome of organ transplantation

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Psychiatry & Behavioural Sciences and
Institute of Urology, University College
London, and Renal Dept, Royal Free
Hospital, London.

Objectives: To develop a questionnaire to assess the impact of organ transplant on recipients: the Transplant Effects Questionnaire (TEQ).

Methods: The pool of 51 questions, derived from themes identified in published studies and from interviews with renal transplant recipients, was sent to 333 renal transplant patients.

Results: A response rate of 64.0 per cent (n=213) was achieved. PCA using varimax rotation resulted in a 15-factor structure. Five of these factors accounted for 40.9 per cent of the

variance and were 'guilt towards the donor' (17.1 per cent) 'worry about health of transplanted organ' (7.6 per cent), 'adherence' (6.4 per cent), 'disclosure' (5.1 per cent) and 'responsibility' (4.7 per cent).

Conclusion: The TEQ has potential application as a measure in the area of transplantation research. Further research is currently in progress to assess other groups of transplant recipients and examine its relationship to other measures.

ERRATUM

The following abstract was an oral presentation at the Annual Conference in 1998 but was mistakenly omitted from Volume 7(1) of the Proceedings.

Developmental Psychology Section

*Annual Conference, Nottingham University,
6–9 September 1999*

Young children's abilities to deal with ambiguous messages in behavioural tasks

SR BECK & EJ ROBINSON, School of
Psychology, University of Birmingham
Children's understanding of ambiguous
information was investigated using two
behavioural procedures. 5 to 6-year-olds
performed poorly on a verbal evaluative task,
claiming to 'know' the intended referent of an
ambiguous message. However, using a
behavioural measure we found that they were not
overly committed to their interpretation and would
revise it on hearing a second piece of
disambiguating information. In a second
experiment we found that 7- to 8-year-old children,
but not 5- to 6-year-olds, would independently
seek disambiguating information, before making
an interpretation. We suggest that the younger
children may be able to resolve some problems
arising from ambiguity, but are less successful
when they must be proactive in finding a solution.

Exploring the prevalence and content of normative fear and anxiety in school-aged children

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Psychology, Faculty of Applied Social
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Buckinghamshire Chilterns University
College, High Wycombe

This paper presents the findings of two studies which examined the normative fears and anxieties experienced by children aged between 5 and 15-years-old. Structured interviews and self-report measures of negative affect were utilized to explore the prevalence and content of children's everyday fears and anxieties. Analysis of participants responses revealed a number of significant developmental trends, the most interesting of which indicated that there was an age-related progression in children's ability to recall their experiences of fear and anxiety as two distinctly separate emotional states. The findings of these studies are interpreted in terms of a developmental-cultural hypothesis, the

practical implications of which are discussed with relevance to psychologists and health professionals.

Young children's understanding and representations of negative numbers

R BORBA & T NUNES, Institute of
Education, University of London

This study investigated if young children's difficulties with negative numbers are related to the understanding of this concept, to their representation or to both. We asked 7 and 8-year-olds to solve problems involving negative measures and negative relationships. Half of the children were asked to represent the numbers externally and half were not. Quantitative and qualitative analyses show differences between the understanding of measures marked negatively and relations and also between understanding and representing negative numbers and this differentiation must be considered in formal instruction. Protocols will be presented for discussion.

Cognitive profiles of children with specific language impairment

N BOTTING & G CONTI-RAMSDEN,
Centre for Educational Needs, School of
Education, University of Manchester
Examinations into the cognitive abilities of children with specific language impairment (SLI) may provide insights into their clinical needs and into possible underlying mechanisms. In this study, 242 children recruited from infant language units were visited at 7 years, 8 years and 11 years. Each time they completed a number of standardised assessments including cognitive tasks. At 7 years of age, only 1 per cent of children fell below 2sd (2.5 centiles) on a test of non-verbal ability, at 8 years this rose to 3 per cent and at 11 years to 27 per cent. Verbal scores were significantly below performance items as expected within this clinical group. Profiles of cognitive abilities show interesting patterns suggesting that a combination of working memory, serial recall and specific language deficits may underlie SLI in general. A number of different profiles related to SLI subgroups may also exist.

Examining attachment issues during children's progress through foster care

D BROWNE, A MOLONEY & M TAYLOR,
Dept of Applied Psychology, University
College Cork, Ireland

Drawing on previous research, this paper examines attachment patterns in children who were placed with a foster family when they are very young and children who were placed after experiencing inconsistent and often abusive parenting. From a total of 127 foster placements, children who were originally placed in care when they were younger were more likely to experience successful placements ($p < .0005$), as were those who were placed in their current placement when they were younger ($p < .0001$). Children placed when they were older were significantly more likely to experience externalising problems ($p < .00001$). Case studies help illustrate how older children have difficulties forming attachments with alternative carers, and show many of the symptoms of attachment disorder.

Children's understanding of the relation between addition and subtraction: Inversion, identity and decomposition

P BRYANT, C CHRISTIE & A RENDU, Dept
of Experimental Psychology, University of
Oxford

In order to understand addition and subtraction fully, children have to know about the relation between these two operations. We looked at this knowledge in two studies. In one we asked whether five- and six-year-old children understand that addition and subtraction cancel each other out and whether this understanding is based on the identity of the addend and subtrahend or on their quantity. We showed that children at this age use the inversion principle even when the addend and subtrahend are the same in quantity but involve different material. In our second study we showed that six- to eight-year-old children also use the inversion in combination with decomposition to solve $a+b-(b+1)$ problems. In both studies, factor analyses suggested that the children were using different strategies in the control problems, which require computation, than in the inversion problems,

which do not. We conclude that young children understand the relations between addition and subtraction and that this understanding may not be based on their computational skills.

Why is it so difficult to draw scissors?

RN CAMPBELL, Dept of Psychology, University of Stirling

Material exposing the difficulty children have in making a drawing of an open pair of scissors is presented. Observational data has been collected and experiments have been carried out since 1987 on approximately 200 pre-school and early school children. Although children copy crosses from age four or earlier, and soon make engaging but inadequate attempts to join the scissor blades, the blades are rarely crossed before five, and the difficulty with crossing persists in six-year-olds. Several plausible explanations of the problem have been eliminated by experiment. What remains is the possibility that a false theory of the operation of scissors influences drawings.

Patterns of development in children's addition

KH CANOBI, RA REEVE & PE PATTISON, University College Northampton

The research examined individual and age-group differences in children's understanding of addition and investigated whether these differences were related to children's problem solving procedures. The mathematical properties of whole number addition were used as a framework for exploring understanding. Eighty five- to eight-year-olds in three grade levels judged aspects of additive composition, commutativity and associativity in the context of objects, numerals and abstract symbols and solved addition problems. The results revealed a strong relationship between patterns of conceptual understanding and the use of fast, accurate problem-solving procedures, even after age-group differences were taken into account. The findings suggest that knowledge about formal principles is an important aspect of developmental change and individual differences in children's addition.

The role of social anxiety, malevolent aggression and social self-esteem in adolescent emotional behaviour

J CLARBOUR & D ROGER, Dept of Psychology, University of York

This paper reports on the Emotional Behaviour Scale (EBS), which includes three factors of Social Anxiety, Malevolent Aggression and Social Self-esteem. The scale is a psychometric instrument for assessing adolescent emotional coping strategies and is predicated on the emotion control model in the context of stress. Although the emotions acknowledged by children are consistent with the adult findings on rumination, there are relatively few valid and reliable tools with which to measure children's self-reported emotional behaviour. The EBS has been extensively validated for ages 10 through 16, demonstrating good reliability. Current research findings and implications for application are discussed.

Does implicit understanding predict receptivity to training in autism?

WA CLEMENTS, T RUFFMAN, P WILMOTT, P RIDEOUT & A IMPORT, Experimental Psychology, University of Sussex

The majority of studies aimed at training children with autism in theory of mind skills have shown limited success. Most show an improvement on the task they were trained on but show little generalisation of this knowledge. This paper will report two new training studies designed to assess whether the presence of implicit understanding at pre-test, as assessed by anticipatory looking, predicts receptivity to training and ability to generalise trained

knowledge. Only a small minority of children in each study showed evidence of implicit understanding. Implicit understanding significantly predicted performance on the transfer task but not performance on the training task.

How general is general? Rule-based reasoning and its links with theory of mind and syllogistic reasoning

E COLVERT, D CUSTANCE & J SWETTENHAM, Psychology Dept, Goldsmiths College, University of London

The present study aimed to investigate the influence of rule-based reasoning (RBR) on other areas of early cognitive development. Previous research has found links between RBR and Theory of Mind (ToM) and this study included measures of another area; syllogistic reasoning. Sixty, three- to five-year-old children were assessed on measures of RBR, syllogistic reasoning and verbal IQ. Similar developmental patterns were found for RBR and syllogistic reasoning and an age-partialled correlation revealed a significant relationship between RBR ability and forms of syllogistic reasoning. The results from this study support the suggestion that the development of general reasoning skills, in particular complex embedded rule-based reasoning, may be necessary for development in the area of syllogistic reasoning as well as that of ToM.

Executive function, verbal intelligence and theory of mind development in preschoolers: Failure to find a unique role for inhibition in mental state reasoning

D CONNOLLY, Dept of Experimental Psychology, School of Biological Sciences, Sussex University

Fifty-one children, mean age 4.04, were tested on various measures of executive function, verbal intelligence and theory of mind ability. The executive function tasks comprised novel measures of inhibition (a children's Stroop type task) and working memory (recall of target items from a visual array). Results found links between executive function, verbal ability and theory of mind performance. However, once verbal ability was taken into account, the associations between executive function and theory of mind performance fell below significance. These findings are inconsistent with previous research, which has posited a unique role of inhibition in ToM reasoning and development.

Calendrical calculation: More than a savant skill?

R COWAN, Child Development and Learning, Institute of Education, University of London

Calendrical calculation is the ability to name the days of the week for dates in the past and future without the use of external aids. Why and how anyone acquires this skill remain uncertain. Previous research has concentrated on savants, people with low measured intelligence who have this talent. This and other savant skills, such as art and music, are more common amongst autistic people, encouraging speculation about autistic characteristics fostering the development of exceptional abilities. The calendrical skills of two ordinary boys, aged 5- and 6-years-old, will be described and compared to those of a sample of adult calendrical savants.

Children's use of computers at school and at home

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We are concerned with continuities of computer use between the classroom and the home. We describe preliminary findings from a longitudinal study involving observations made in each environment. Classroom-based interviews have been conducted with children from years 2, 4 and 6 (ages 7, 9 and 11). The children are drawn

from five schools representing a broad catchment area and have a commitment to serious use of IT. The home sample is a subset of this group and based on volunteer families. Computer use is monitored in these homes and the fate of a number of particular educationally-oriented titles is being tracked. We make a comparative report of usage patterns, engagement and social support in both settings.

Modelling the optional infinitive hypothesis: a computational account of tense optionality in children's speech

S CROKER, J PINE & F GOBET, School of Psychology, University of Nottingham

The Optional Infinitive hypothesis proposed by Wexler (1994) is a theory of children's early grammatical development and can be used to explain a variety of phenomena in children's early multi-word speech. However, this theory attributes a great deal of abstract knowledge to the child. In this paper we present a computational model of early grammatical development based on the distributional properties of items occurring in the input, using a performance-limited distributional analyser. The model is able to reproduce these phenomena observed in children's speech. Our findings undermine the claim that optional infinitive phenomena require an abstract grammatical analysis.

First- and higher-order theory of mind in children with severe visual impairments

S CUPPLES, L PRING & J SWETTENHAM, Psychology Dept, Goldsmiths College, University of London

Theories of the development of theory of mind (ToM) emphasise the role of vision. Two studies examining ToM understanding in children with severe visual impairments (SVI) were carried out to investigate the impact of lack of vision on ToM development. In the first study, children with SVI (5 to 9 years) received adapted false-belief tasks. In the second, children with SVI (5 to 11 years) completed a version of the 'Strange Stories' task (Happé, 1994). In each study a matched group of sighted children was also given the tasks. Comparison of the groups found that children with SVI passed fewer of the ToM tasks. The children with SVI who failed the tasks had lower verbal mental ages than the children who passed. This suggests that children with SVI have a delay in the development of ToM skills.

Influence of video mediation on adult-child interviews: Implications for the use of the live link with child witnesses

G DOHERTY-SNEDDON & S McAULEY, Dept of Psychology, University of Stirling

The impact of video links on children's evidence about a neutral event was investigated. Thirty-two 6-year-olds and 32 10-year-olds took part. Face-to-face and video condition interviews did not differ in terms of: total correct information; relevant information given during narrative recall; or the style of questioning required. However, more incorrect information was given during specific questioning in the face-to-face interviews, and younger children were more resistant to leading questions in the video condition. Such effects are attributed to increasing social distance in the video link. Some negative effects were found and were associated with attenuation of visual cues in the video condition. It was concluded that video links primarily had a positive effect on evidence quality.

Executive functioning and theory of mind: A meta-representational debate

E FLYNN, C O'MALLEY & D WOOD, School of Psychology, University of Nottingham

The aim of the studies discussed in this talk was

to investigate the claim that mental states are an integral part of executive control (Perner, 1998). Perner suggests that both the understanding of mental states and executive inhibition are underpinned by meta-representational skills and that in order to implement one's meta-representational ability appropriately one must have an understanding of the mind. Two studies will be described which investigate these claims. Both consider the relationship between the children's ability on a test of meta-representation, an executive inhibition task, the Luria lights task (Luria, 1959) and a test of mental state understanding (Wimmer & Perner, 1983). The results suggest, contrary to Perner's position, that children can still perform well on a test of executive inhibition even though they do not have good meta-representational skills.

SLI children's solutions to addition problems

R GEORGE & J DOCKRELL, Institute of Educaton, University of London

Children with language impairments have difficulty with number work. The children produce fewer accurate and flexible solutions to addition problems, however the nature and extent of this difference is presently unspecified. This study addresses this gap by examining solutions to 36 addition problems. Twenty-seven language impaired children aged 6- to 7-years-old and two groups matched for chronological age and language level participated and their performance was compared across tasks that varied in terms of verbal context, addend size and concrete materials. Overall the SLI children made more errors and used fewer strategies. In addition to poor language skills a number of task features influenced the children's performance. The results have implications for teaching.

Immunity to functional fixedness in young children

TP GERMAN, Dept of Psychology, University of Essex

Adult participants exhibit functional fixedness by failing, or being slow, to make use of an object for an unusual function, when the object's conventional function is previously demonstrated (Duncker, 1945). Here, functional fixedness is demonstrated in older children (6- and 7-year-olds); they are significantly slower to use a box as a support when its containment function has been demonstrated than when not. However, younger children (5-year-olds) are immune to this effect; they do not show the demonstration/no demonstration difference and actually outperform their older peers when the conventional function is demonstrated. Implications for developing knowledge about object function are discussed.

Simulation of the balance beam task using EPAM

F GOBET, ESRC Centre for Research in Development, Instruction and Training, Dept of Psychology, University of Nottingham

This paper compares Piaget's theory of development with Feigenbaum and Simon's (1962, 1984) EPAM theory. An attempt is made to map the concepts of assimilation and accommodation in Piaget's theory onto the concepts of familiarisation and accommodation in EPAM. An EPAM-like model of the balance scale task is then presented, with a discussion of results showing how it accounts for children's discontinuous, stage-like development. The analysis focuses on the transition between rules, using catastrophe flags (Gilmore, 1981) as criteria. It is argued that EPAM, a symbolic system, shows behaviour similar to that of neural nets, non-symbolic systems, used in the same task.

The impact of training on workers in early childhood education: An evaluation of the foundation course in playgroup practice

S HEARNS & E HENNESSY, Dept of Psychiatry, University of Dundee

The effects of the Foundation Course in Playgroup Practice, run by the Irish Pre-school Playgroups Association (IPPA), on caregiver behaviour and children's development was examined. Sixteen caregivers attending this course and 17 comparison caregivers were assessed on a measure of caregiver sensitivity in the child-care centres in which they were employed. Two children in each centre were assessed for social and cognitive competence. Both the training and comparison caregivers and children were observed before and after the former group attended the training course. Caregivers who received training made significant gains in positive relationship and decreased in levels of detachment and the children in their care made significant gains in complex social and cognitive play from pre- to post-training. The comparison group adults and children showed no significant improvements from pre- to post-test times.

Group consensus and the integration of conceptual and procedural learning

C HOWE & A TOLMIE, Department of Psychology, University of Strathclyde

Developmental psychology pinpoints differences between the conditions that foster conceptual and procedural learning, the former enhanced by debate between peers and the latter by guidance from experts. The two studies reported in this paper with 9- to 12-year-old children working respectively on shadow formation and heat transfer endorse these differences, but suggest that integration between the conditions is possible given collaborative tasks where: (a) conceptual knowledge is debated and consensus reached; (b) consensual positions are subjected to guided experimental appraisal, with conclusions drawn from test results. Process analysis indicated that consensus facilitates a metacognitive perspective upon appraisal, which renders conceptual knowledge salient during the testing activity.

Language ability and theory of mind performance in deaf children: A preliminary study

L JACKSON, School of Psychology, University of Cardiff

Deaf children were tested on three first-order theory of mind tasks and a BSL receptive language task (Herman & Woll, 1999). Hearing children acted as controls. Language ability was positively correlated with theory of mind ability for both the deaf and hearing children. Age was also correlated with language ability for both deaf and hearing children. However, age was correlated with theory of mind ability only in hearing children. This suggests that language ability is a better predictor of theory of mind ability in deaf children and supports the theory of language underlying theory of mind development.

The relationship between vocabulary acquisition and verbal short-term memory in children with learning disability

C JARROLD, A BADDELEY, C PHILLIPS, & A HEWES, Centre for the Study of Learning and Memory, Dept of

Experimental Psychology, Univ. of Bristol Studies have shown that children's vocabulary skills are related to their verbal short-term memory; however, the causal direction of this relationship is the subject of debate. This issue was addressed in two studies by investigating whether verbal short-term memory was more closely related to the rate at which individuals develop vocabulary or to the level of vocabulary attained. In particular we asked whether groups

of children with learning difficulties who had reached the same level of vocabulary at different rates differed in verbal short-term memory. The results indicate that in this population, it is vocabulary level that constrains verbal short-term memory performance.

Of mice and men: gender, pair composition and computer vs paper presentation of an English language task

R JOINER, T KEOGH, P BARNES & K LITTLETON, School of Education, Open University

The aim of the study was to compare the verbal and physical interactions of same gender pairs and mixed gender pairs when an English language task was presented either on a computer or on paper. The children attempted both presentations of the task and were aged between 13- and 14-years-old (24 boys and 24 girls). There were no significant differences in the paper presentation of the task. However, in computer presentation, the boys dominated both the amount and type of verbal interaction and the control of the mouse in the mixed gender pairs. These findings are explained in terms of gender differences in perceived expertise with computers and theoretical and practical implications are discussed.

Comparing the verb-island hypothesis account of syntax acquisition with a distributional account

G JONES, F GOBET & JM PINE, Dept of Psychology, University of Nottingham

Tomasello's (1992) verb-island hypothesis claims that children assign syntactic roles on a verb-specific basis. However, Pine, Lieven and Rowland (1998) have shown that islands are apparent for instances of categories that are not verbs. A computational model which is sensitive to the distributional properties of its input was trained on a corpus of mothers utterances from two sets of mother-child interactions. The model shows that a distributional account of the input to the child can account for empirical phenomena that are consistent with the verb-island hypothesis, and also phenomena which fail to support the verb-island hypothesis.

Modelling vocabulary acquisition: An explanation of the link between the phonological loop and long-term memory

G JONES, F GOBET & JM PINE, Dept of Psychology, University of Nottingham

The working memory model has been adapted to account for vocabulary acquisition. One of the theoretical weaknesses of this approach is that no account is given for the mechanisms and representations used in long-term memory learning. This paper presents a computational model combining the EPAM/chunking approach with the working memory approach. Phonemic learning is simulated as the elaboration of a discrimination net. Simulations show that the model can account reasonably well for the nonword repetition task described by Gathercole and Baddeley (1989), a task often presented as a powerful diagnostic of vocabulary learning.

Improvements in understanding of representation from six to nine years of age

S HULME & P MITCHELL, School of Psychology, University of Nottingham

There is disagreement in the literature as to when children acquire full representational abilities. Some (e.g. Perner, 1991) claim that this is at 4 years old when children can pass a test of false belief. Others (e.g. Russell, 1987) suggests representational difficulties persist beyond the age of 4 years. Russell found that 6-year-olds illegally substituted a co-referential term in the

context of a verb of propositional attitude (e.g. think). In his study, children were asked a complex question, which could have led them to under perform. In our study, children were asked a simple question and had to respond by choosing an image as a thought content for a protagonist. Unlike 9-year-olds, 6-year-olds selected an image that corresponded with their own thought and thus committed an intensional error. This occurred even though children successfully acknowledged the protagonist's ignorance and passed a test of false belief.

Developing representations of musical pitch: A contextual approach

A LAMONT, Music Research Group, Department of Psychology, Leicester University

This research addresses the lack of developmental theories of representations of music by delineating a new contextually-sensitive account of musical development. A series of experiments was conducted with children aged between 5 and 16 with different amounts of musical experience. Children's judgements of note fittingness following different musical contexts were analysed and compared with a Vygotskian microgenetic interactive study. The progressive differentiation of judgements according to the particularities of contexts observed here supports the general hypothesis of a shift from attention to more global features to a more analytic mode of listening with age, which was enhanced by musical experience and training.

Handling the relation between internal representation and utterance meaning: Developments during middle childhood.

S PARSONS & P MITCHELL, School of Psychology, University of Nottingham

We tested children in school years 1-5 (about age 5 to 10 years) on their ability to acknowledge ambiguity in utterances which appeared in stories. A speech bubble showing the utterance and a thought bubble stating the speaker's internal representation of the referent were either present or absent. The speech bubble had no effect, but children were more likely to judge that the speaker had not said exactly which item he or she wanted in the presence of a thought bubble. This effect was strongest when the utterance was unambiguous; there was already a tendency to evaluate negatively when the utterance was ambiguous, even in the absence of a thought bubble. Apparently, children felt it was not sufficient for the utterance to single out the intended referent; rather, the utterance needed to be an accurate characterisation of the internal representation, even if this included referential redundancy.

The development of young children's understanding of the relationship between a model and the room it represents

VL PERRY & RN CAMPBELL, Department of Psychology, University of Stirling

Research into young children's understanding of spatial representations typically involves children either viewing a representation and manipulating the referent, or vice versa. Given that a representation 'stands for' its referent, it seems natural to infer about a referent space from a representation. However, a referent space does not 'stand for' a representation, so we might expect inferring in the opposite direction to be harder. Thirty-six nursery and primary one children either retrieved/positioned an object in a room after viewing an analogous object in a model of that room, or the opposite. Results support the hypothesis that young children find it easier to infer about the real world from a representation. However, as they develop, their ability to do both tasks improves. Findings are discussed in terms of children's competence vs.

the cognitive 'load' of the experimental paradigm.

From inter-activity to cognitive activity: The microgenesis of a learning conversation

CD PIKE, Department of Psychology, University of Kent at Canterbury

Socio-cultural research into cognitive development has yet to adequately account for how conversational involvement leads to internalisation. This paper illustrates the use of Microgenetic Conversation Analysis (MCA) to analyse the microgenesis of an adult-child learning conversation. It is shown firstly, how the adult and child interactively create and recycle locally specific patterns of talk-in-interaction via an ongoing, collaborative exploration of the presuppositional basis of their own talk; and secondly, how in doing this, they develop a joint orientation to (i) sequential patternings of talk that are increasingly less tied to the specific patterns of turn-taking in which they originated, and (ii) the prosodic and rhythmical organisation of their ongoing talk. The implications of these findings for the Vygotskian theory of internalisation are discussed.

Do individuals with autism and Asperger's Syndrome utilise background knowledge in visual processing?

D ROPAR & P MITCHELL, School of Psychology, University of Nottingham

While several studies suggest that individuals with autism use background information appropriately (Pring & Hermelin, 1993), others have found evidence that this may be a particular area of weakness (Snowling & Frith, 1983; Pring, Hermelin & Heavey, 1995). The aim of the current study is to investigate whether individuals with autism and Asperger's Syndrome utilise background knowledge when matching objects with colours. Participants were presented with cards illustrating common objects and were asked to pair them with one of two colour patches. Some objects were coloured inappropriately (e.g. blue banana), allowing a participant to pair it with either blue or yellow. Results indicated that participants chose the associated in preference to the surface colour. This suggests that background knowledge governed card sorting in individuals with autism and Asperger's Syndrome as it did in controls (excluding reception).

Passing the false belief test: A connectionist account

PJ RUDLING & JR EISER, Department of Psychology, University of Exeter, & D MARESCHAL, Centre for Brain and Cognitive Development, Dept of Psychology, Birkbeck College, University of London

Passing a false belief test (e.g. the Smarties or deceptive box task) is taken to indicate that a child has developed a basic theory of mind. We present a connectionist model that solves this task giving the same progression of responses as children, based on information similar to that available to children. The model focuses on the conflict between what a child can see and what a child can remember, and then predicts what the network itself, or another agent might answer. Using such a technique gives an insight into many of the issues of ToM research, for instance the Theory Theory-Simulation Theory debate.

Autistic children's non-verbal theory of mind

T RUFFMAN, W CLEMENTS & P RIDEOUT, Experimental Psychology, University of Sussex

Clements and Perner (1996) showed that normal children show correct anticipatory gaze in a false belief task before they give correct verbal answers. Sixteen autistic children were tested using this paradigm (a standard translocation

task). Following the object's transfer a narrator announced that the story character would return. We measured which location children expected Sam to return to. Most autistic children did not show correct anticipatory gaze in the absence of correct verbal performance. This paper will also present the results of a much larger study into autistic and mentally retarded children's nonverbal understanding of mind.

Three- to nine-year-olds' perception of physical and psychological causality in schematic motion events

A SCHLOTTMANN, Department of Psychology, University College London

Two studies investigated intuitions of cause-and-effect in events as introduced by Michotte (1963). If a square moves towards another which moves upon or before contact, adults report physical or social/psychological causality: The second square is launched by or tries to escape from the first. A pause between movements eliminates such impressions. These studies used pictures (e.g., person kicking ball) to consider how children view such events. From five years, intuitions of domain-specific causality were governed by similar spatiotemporal parameters as in adults. Younger children's judgements were overly broad. These findings are related to the view that perceptual causality supports development.

Pre-school children's understanding of spatial representations

C SHEVELAN, M BLADES & C SPENCER, Dept of Psychology, University of Sheffield

Recent research suggests pre-school children can distinguish identical map features. Others suggest only much older children can do this. However, different studies have used representations which may not be comparable. In this study, 70 children aged 36, 42 and 48 months were presented with a large model and three representations of this; map, scale model and aerial photograph. The experimenter showed children a place in the representation and the children had to locate the same place in the large model. The results show that children's ability to distinguish identical features develops quickly, regardless of the type of representation used.

Parental use of emotional and mental state terms to their children in conflict situations and theory of mind development: A longitudinal study.

L SLADE & T RUFFMAN, Experimental Psychology, University of Sussex

The causal relation between theory of mind understanding and parental use of emotion and mental state responses in conflict situations was assessed by giving 2- to 4-year-old children (n=72) a range of theory of mind tasks and language/IQ tasks at three timepoints over a year whilst mothers gave their responses to a range of typically naughty situations. Brief analysis of data so far gathered shows that mothers who refer to the emotional impact of transgressions rather than behavioural consequences had children with advanced ToM. More specifically, it was reference to the mother's own or another's emotion (i.e. other to the child) rather than to the child's emotion that was the significant strategy.

Bullying: Relationships with social competition, machiavellianism and personality

J SUTTON, Glasgow Caledonian University, & E KEOGH, Goldsmiths College

This study places bullying within a general framework of social competition and Machiavellianism. 198 9- to 12-year-old children completed several measures, including a newly developed questionnaire assessing motivations behind social competition and effort in class. A

'Desire for Social Success' factor (incorporating a deliberate lack of effort) was positively correlated with Machiavellianism and Psychoticism, and negatively correlated with Pro-Victim score and Lie score. Pro-Victim score was negatively correlated with Machiavellianism and Psychoticism, and positively correlated with Lie score. Bullies scored significantly higher than controls on Machiavellianism, and significantly lower on Pro-Victim score. Results are discussed in terms of further study and implications for intervention strategies.

What do infants learn in imitation tasks: Affordances or actions?

D THOMPSON & J RUSSELL, Dept of Experimental Psychology, University of Cambridge

Sixty infants, (half aged 14-18.5 months and half 19-26 months) were presented with three counter intuitive means end tasks. After an initial baseline measure infants watched a demonstrator model the target action required to achieve the goal from either a first or third person perspective. Results demonstrated no difference in performance between the two viewing perspectives. Subsequently, 36 different infants (aged 16-20 months) either watched a demonstration of target acts by the experimenter (Modelling) or the action being carried out electronically (Ghost). Performance in the Ghost condition was significantly better in one task and significantly poorer in the other relative to the 'Modelling' group. These data raise questions of what infants are imitating.

Children's interpersonal awareness and social behaviour

D WARDEN, D CHRISTIE, H FITZPATRICK, K REID & W CHEYNE, Centre for Research into Interactive Learning, Department of Psychology, University of Strathclyde

160 9- and 10-year-old children, from 14 primary schools, were identified, using peer nomination methods, as being either (i) helpful or caring children, (ii) physical or relational bullies, (iii) victims of bullying, or (iv) neutral, not being nominated in any of these three categories. Each child was assessed on measures of moral reasoning, empathy, cognitive and emotional perspective-taking, social problem-solving, and verbal ability. Differences between these four groups of children on the above measures will be identified and discussed in the context of an intervention programme designed to foster interpersonal awareness, which constitutes the next stage of the research.

Children's decisions about what to believe and their ability to report the source of their belief

EL WHITCOMBE & EJ ROBINSON, School of Psychology, University of Birmingham

In three experiments three- to five-year-olds decided between conflicting sources of information and reported the source of their knowledge. In Experiment 1, child and experimenter each experienced a picture either by seeing the whole thing or gaining an uninformative partial view through a window. Child and experimenter always had different access, so one was better informed. Each announced what they thought the picture showed, the experimenter always contradicting the child. In Experiment 2, child and experimenter either saw or felt the contents of a tunnel. Children revealed a working understanding of the link between information access and belief insofar as they usually made correct decisions about which source to believe, but they often could not report the source of their belief (seeing, feeling, or being told). However, children's decision-making deteriorated in Experiment 3 when they observed rather than participated in the information gathering. The difficulty of source monitoring on a particular task is reliant on the reflection and evaluation required.

Young children's understanding of illness: Improving knowledge through provision of facts and small group discussions

JM WILLIAMS, L PENDER & I WALLACE, Faculty of Education, Univ. of Edinburgh

The study explored four- (n=30) and seven-year-olds' (n=30) understanding of illness and attempted to improve their knowledge through a factual story and group discussions. Children were initially individually interviewed about common illnesses. A week later half of the children in each age group (n=30) were included in a small group (n=5) intervention. All children were subsequently individually interviewed using the initial interview schedule. Seven-year-olds exhibited more sophisticated knowledge of illness at pre-test. Comparison of pre- to post-intervention changes showed that children in the intervention condition had improved in their understanding significantly more than controls ($F(1,58)=6.18$ $p=.012$).

POSTERS

The effect of questioning style on young children's understanding of aerial photographs

S ADAMS & M BLADES, Dept of Psychology, University of Sheffield

There is current debate about young children's understanding of aerial photographs. Some researchers emphasized children's ability (e.g. Blaut, 1997), but others have argued that children's appreciation of photographs is limited (e.g. Liben & Downs, 1997). However, these researchers used different procedures to test children. In this experiment five- to seven-year-olds' ability to identify features on a large scale black and white vertical aerial photograph was tested using different procedures used by previous researchers. There were age differences in performance, but the type of testing procedure had no effect. Irrespective of procedure, children made less errors than previous researchers reported.

Can young children distinguish between information learnt from TV and from real life sources?

M BLADES, Dept of Psychology, University of Sheffield, E ROBINSON, School of Psychology, University of Birmingham, KP ROBERTS, National Institute of Child Health and Human Development, Washington, DC, US & S HARTLEY, Dept of Psychology, University of Sheffield

Children aged 4, 5, 7 and 10 years were shown two ten-minute events about how to make a puppet. The events were similar, but differed in detail (e.g. the type of objects included). Each child saw one event on television and one event acted out in front of them, on separate days. A week later children were given an unexpected memory test and if they recalled an object they were asked to say in which event it had occurred. The 4-, 5- and 7-year-olds were unable to recall whether they had seen an object on television or in real life. This has implications for theories of source monitoring, and for the accuracy of children's eyewitness testimony.

Grouping practices within primary school classrooms: Changing patterns with pupil age

E BAINES, P BLATCHFORD & P KUTNICK, Institute of Education, University of London

This paper reports data from two large-scale surveys of Reception, Year 2 and 5 primary-school teachers which examined the grouping of pupils for learning. Over 300 schools were sampled from a number of LEAs. Primary-school teachers reported on the grouping arrangements in their classrooms at one time in a day in relation to teacher presence, curriculum, learning task and pupil interactions. Grouping

arrangements across the year levels showed a range in group size and composition which were differentially related to pupil age, adult report, particular task, curricula and interaction types. Survey results are supplemented with case study and interview data and discussed in relation to pedagogic grouping principles, experimental research and developmental theory.

Children's acquisition of novel science terms: Does fast mapping work?

N BRAISBY, Dept of Psychology, London Guildhall University, J DOCKRELL & R BEST, Division of Psychology, South Bank University

Fast mapping studies have demonstrated that young children can 'learn' new words after a single exposure. The present experiment was designed to evaluate the extent to which word class, semantic domain and prior linguistic knowledge influence the mapping process. 260 children (4;0-7;6) viewed a science video that introduced new vocabulary items. Their acquisition of the terms was assessed across different tasks and test sessions. Children's comprehension of the new terms varied according to word class and semantic domain. Further error patterns suggest that the children's pre-existing language measures and their knowledge of the domain influenced performance.

Children's eyewitness testimony: Processes underlying differences in suggestibility

AM BRIGHT-PAUL & DB WRIGHT, Dept of Experimental Psychology, Bristol University

Seventy-two children witnessed a filmed event. The following day, participants listened to a structurally identical misinformation story, in which some of the target items were different to those in the film. Participants identified the source of target items in either a four or two choice option posting box procedure. Verbal ability and success on three standard Theory of Mind tasks was also measured. Findings indicated age differences in overall memory scores and errors attributable to misinformation, but not in a suggestibility measure that took into account misattribution of items never seen before. Suggestibility and source monitoring skills were investigated in relation to success on Theory of Mind tasks and verbal ability.

To tell the truth or to be polite? How the understanding of mental states influences the decision

KA BROOMFIELD, EJ ROBINSON, & WP ROBINSON, School of Psychology, University of Birmingham; Dept of Experimental Psychology, University of Bristol

In research of children's understanding of deception, lying is typically treated as morally wrong. We focus on understanding of 'white lies', for which the maxim 'Be truthful' conflicts with 'Be polite'. Participants aged 4-5, 6-7, and 8-9 years were asked to choose and justify a response for a story character who had received a disappointing gift. Significantly more of the older children suggested deceptive rather than truthful responses. Suggesting deceptive responses was highly associated with justifications referring to the gift-giver and understanding intention, belief, and emotion within the story context. Understanding these cognitive prerequisites was, however, not sufficient for suggesting a 'white lie'; other factors such as taking responsibility for the interaction may be relevant.

Newborn infants and attractive faces

E BROWN & A SLATER, School of Psychology, University of Exeter

Two experiments are described which show that newborn infants spend more time looking at attractive faces when paired with faces judged to

be less attractive by adults. Two further experiments demonstrate that this 'attractiveness effect' is affected by the orientation of the facial stimuli and that newborn infants use information about internal facial features in making preferences based on attractiveness. The results are discussed in terms of innate facial prototypes and rapid learning about faces in the hours after birth.

The effects of severe social deprivation on the development of language and cognition

L BROWN, J L LOCKE & P JONES, Dept of Human Communication Sciences, University of Sheffield

The atypical linguistic and cognitive development of previously institutionalised adopted Romanian children who were socially deprived from birth are being researched, longitudinally, using a neurolinguistic theory of development. The children in the present study were adopted around the age of four and it is suggested here that, even at this late age, the language outcome for these children is not fixed, but maybe variable according to the differences in how they were treated in their early years and individual psychology. The implications of this for concepts of developmental 'critical, sensitive' or 'optimal' periods will be discussed. Preliminary findings pertaining to the linguistic profiles of two case studies, Maria and Sarah, will also be presented.

Early phonological awareness in pre-school children

J CARROLL & M SNOWLING, The Dept of Psychology, University of York

Forty-one pre-school children aged three to four years were given a series of phonological tasks requiring different units of analysis and presented with either a semantically or phonologically similar distractors. It was found that there was a tendency for the tasks requiring the detection of larger units to be easier than tasks requiring the detection of smaller units. There was also a tendency for children to solve the tasks on the basis of global similarity rather than on the basis of phonemic identity. Both of these results are compatible with the idea that young children represent words globally, and proceed to a more adult-like segmented representation throughout the pre-school years.

Why homonyms are related to false belief but synonyms are not

WA CLEMENTS, M KVARV & A GARNHAM, Experimental Psychology, University of Sussex

Doherty and Perner (1998) report a relationship between children's understanding of synonyms and false belief independent of verbal ability as assessed by the BPVS. They suggest that both are dependent on the ability to understand the representational mind. In this study, children aged three- and four-years-old were given a homonyms, synonyms and false belief task. A measure of syntax was used to assess verbal ability. Understanding of both homonyms and synonyms was related to false belief but when syntactic understanding or chronological age were accounted for, synonyms no longer predicted false belief. It is suggested that homonyms and false belief both share an inhibitory requirement explaining this relationship.

Social cognitive development and the deaf child: Labelling and interpreting emotion

P COOPER & N YUILL, School of Cognitive and Computing Sciences, Univ. of Sussex

The ability to accurately recognise and interpret the emotions of others is critical for effective interpersonal communication and social skills. Several authors have explained the emotional immaturity observed in deaf children in terms of difficulties in understanding social cues. The present study investigates the performance of 31 oral trained deaf children (MA: 8;11) and 34 hearing children (MA: 9;0) on two levels of

emotion understanding. The first investigates the ability to accurately label emotions; the second involves matching emotional expressions with emotion-arousing situations and a parallel non-social face-processing task. No significant difference was found between deaf and hearing children's ability to label or interpret emotion-arousing situation. A main effect of task was evident with both groups performing better on the emotion labelling and non-social inferencing task than the emotion-arousing task. We discuss the results in terms of consistencies with earlier research by the same authors on deaf children's theory of mind.

Gender development and conceptualisation: Developmental and psychoanalytical perspectives

P DAVENPORT & H JOHNSON, The Anna Freud Centre, University College London

This study aims to address some of the tensions which exist in research on gender development. While present day researchers have found that children can differentiate between concepts of femininity and masculinity at an early age there is disagreement about how and when gender identity develops and in general how it is conceptualised. Using a combination of observation, structured and unstructured play with a group of clinical and matched non-clinical nursery age children, this study seeks firstly to confirm for gender differentiation and to see if there are any differences between the clinical and non-clinical groups. The same comparison will be made for the developing concept of gender, how different sexes deal with the recognition of differences and the external influences surrounding these children which may be impacting on their conceptual development.

The Mozart effect: Can it be extended to a Bartok effect?

A DAVIES & A DOWKER, St Annes College, Dept of Experimental Psychology, University of Oxford

This study investigated the short-term effects of different forms of rhythmical auditory input on nine-year-old children's performance on three cognitive tasks: Raven's Matrices (often regarded as a spatial reasoning task), arithmetic, and spelling. The input conditions included Mozart, Bartok, rhythmical poetry and rhythmical clapping. The control condition involved sitting in silence. A performance score on each task was obtained for each subject one week before the auditory stimulation procedure. Each child was then exposed to only one of the experimental conditions prior to performing each task. One-way ANCOVAs revealed a significant effect of input condition on amount of improvement in the Ravens Matrices task; but not in either of the other conditions. Both the Mozart and Bartok group improved more than the Mozart group. Implications of these findings are discussed.

How do children respond to the unexpected? Theory of mind and executive function in a competitive game

C EDMONDS, Dept of Psychology, University College London

Children (aged five to eight) played identity guessing games which involved a violation of the mature expectation that one's opponent will use an unpredictable strategy. Children learned the regular pattern used by their opponent and won, but then spontaneously inhibited their successful strategy, guessed in an irregular manner, and lost. This change of strategy may occur because the child thinks that the opponent knows that the child knows the sequence (a second order mental state attribution). Therefore children expect their opponent to change strategy, which drives them to try a new approach. These findings demonstrate a novel form of inhibition: rather than changing a response that has become maladaptive, responses are changed in anticipation of becoming maladaptive.

Visuo-spatial cognition in Williams syndrome: An uneven profile of abilities

E FARRAN, C JARROLD & S GATHERCOLE, Dept of Experimental Psychology, University of Bristol

Williams Syndrome (WS) is a rare genetic disorder occurring in approximately 1 in 25,000 births. Much attention is given to the unique cognitive characteristics of WS, in particular that verbal abilities are noticeably higher than visuo-spatial abilities. Of equal interest is the uneven profile of abilities within the domain of visuo-spatial cognition. We administered six visuo-spatial tests and one verbal test to 22 individuals with WS and found a marked contrast in performance within visuo-spatial tasks. We discuss whether verbal influences on some of these non-verbal tasks might account for the differences observed between them.

Children's attitudes to mathematics: A cross-cultural comparison

A GREGORY, J SNELL & A DOWKER, St Annes College, St Hugh's College, Dept of Experimental Psychology, Univ. of Oxford

This study examined primary school children's attitudes towards, and self-perceived abilities in different aspects of mathematics. The participants were 452 children in ten different countries (England, France, Germany, Greece, Holland, Iran, Israel, Sweden, Taiwan, USA). Ages ranged from six to ten years. Each child was given a questionnaire concerning attitudes and self-perceived abilities in different aspects of mathematics. Results show that the children in every country had a relatively positive attitude towards mathematics; and there was a significant positive relationship between perception of ability and attitudes towards mathematics. Across cultures, boys rated their own abilities somewhat higher than did girls. Attitudes were broadly similar across cultures, but there were some significant differences; for example, contrary to prediction, American children reported more positive attitudes and self-perceived abilities than did Taiwanese children. Possible explanations for these results are discussed.

Developing a pupil-based anti-bullying programme for schools

S GUERIN & E HENNESSY, Dept of Psychology, University College Dublin

The aim of this study was to use pupils' input to develop an anti-bullying programme for primary schools. Four schools were identified as participants. An initial questionnaire survey found that 30.3 per cent were involved in bullying (Victims=14.3 per cent, Bullies=7.6 per cent, Bully/victims=8.4 per cent). Using class discussion and small group work the aims of the programme and the ways in which they could achieve these aims were identified. After 6 weeks a second survey was carried out to examine any changes in the extent of bullying and attitudes to the behaviour.

The drawbridge phenomenon revisited: The case for representational reasoning

R HAYES & A SLATER, School of Psychology, University of Exeter

The research investigated 5-month-old infants understanding of hidden objects. Each infant was presented with one 'impossible' and three possible displays: in the 'impossible' display (180°-with-box) a screen rotated 180° and appeared to pass through a box that had been placed behind the screen: in the possible 130°-with-box display the screen rotated and stopped when it reached the box: in the possible 180°-without-box and the possible 130°-without-box displays, there were no obstructing objects. The infants looked longer at the impossible display, supporting Baillargeon's claims (1985, 1987a, 1999) that infants are able to reason about the continued existence of hidden objects.

Perceptual and social role-taking abilities: A comparison of deaf and hearing children

M HOWLEY & C HOWE, Dept of Psychology, University of Strathclyde

This study aimed to evaluate both perceptual and social role-taking abilities in deaf and hearing children. Participants comprised ten deaf and ten hearing seven- to nine-year-olds, matched for age and sex. While the deaf children performed significantly poorer on the social task, their performance on the perceptual task was comparable to that of their hearing peers. The findings are discussed in the context of language and experiential deficiencies. In addition, a relationship, which approached significance, was found between the two task dimensions, for the deaf children only. The possibility that deaf children's early socio-cognitive development may be heavily dependent on cognitive processes and strategies is considered.

How coherent is central coherence? The effects of young children's visual processing bias on conceptually related tasks

C JARROLD & E COTTINGTON, Dept of Experimental Psychology, Univ. of Bristol

'Weak central coherence' may explain the relatively strong performance of individuals with autism on tasks which require a local visual processing style, most notably block design and Embedded Figures tests. Visual search tasks may also tap the same underlying process. This study investigated whether these various tests really do measure the same ability, by examining inter-correlations across tasks in the performance of 20 typically developing five- and six-year-old children. The results suggest that individual differences in block design, embedded figures and conjunctive visual search performance are inter-related even when differences in age, intelligence, and reaction time are accounted for.

Am I egocentric? Ask my brother: family size and perspective taking ability

L JONES, N JONES, S JONES, L PECKSON, J EATON & B PLESTER, School of Health and Social Science, Coventry University

While early research found children of four and five years unable to succeed at perspective taking, and subsequent research found them more able, given a task more embedded in their daily experience, these studies did not address the effects of family variables upon the children's performance. More recent research has found only children less able than children with siblings on perspective taking tasks and first born children more egocentric than later born children. The present experiment showed children with siblings more able than only children, but first born children least egocentric in perspective taking.

Do young children process representations in state change?

H KIKUNO, Osaka University of Education

In the state change, children see initially that a Smarties tube contains Smarties, which are then replaced with a pencil as the child observes. Wimmer and Hartl (1991) found that children aged three and four years correctly answer Smarties on the belief question in this task. They concluded that children are simply reporting the initial content. In my study, we measured the response time on three false belief tasks of children. There was a relatively long response time on the belief questions for all tasks. Moreover, response times for belief questions correlated across tasks but not with memory and reality questions. These findings contradict Wimmer and Hartl's explanation.

Muscular dystrophy: Pre-schoolers' understanding of chronic illness and peer relationships

N LEWIS & U PRETZLIK, Child Development and Learning, Institute of Education, University of London

This study examined social relationships within the nursery class of a chronically ill child (ML) with muscular dystrophy. In addition, children's understanding of chronic illness and disabilities was considered. ML displayed average popularity rating within the classroom; this was affected by gender, but not by the relative age of the children. The children displayed little understanding of chronic illness and disability; of those who did show marginal understanding, the salience of a child in a wheelchair was clearly greater than children with speech difficulties. Although 89 per cent of the children perceived a handicapped/chronically ill child as 'different' themselves, all of them reported that they liked to play with the disabled child.

Foetal testosterone and social development

S LUTCHMAYA, Developmental Psychiatry, Cambridge

Eighty children were observed at 12 months of age in play situations with a caregiver and experimenter. The frequency with which the infant made eye contact with either adult was recorded. All the mothers had undergone routine amniocentesis during pregnancy, which had revealed no chromosomal abnormality. The amniotic fluid obtained for this test was analysed for the level of foetal testosterone present. Foetal testosterone is thought to influence sexual differentiation of the brain. An inverse relationship between foetal testosterone and amount of eye contact was observed in boys. The same pattern was observed in girls but was not significant.

Children's understanding of English orthography: Using a game to investigate spelling

M MACLEAN & D GLOCKLING, Psychology Dept, Oxford Brookes University & J CORREA, Federal University of Rio De Janeiro

Children's understanding of English orthography was investigated using a 'game' format. Ninety-six children aged 8 to 11 years were asked to play the game 'hangman' and to justify their selection of letters. Their justifications revealed a hierarchy of levels of understanding of spelling rules. The sequence of children's choices in the hangman game was examined using a lag sequential approach, and related to their general strategy, spelling age and BPVS scores. The results showed that a wide range of strategies were used within each age group. It is argued that the task may provide useful information to teachers assessing children's understanding of spelling rules.

Greek parents of children with cancer talk about their experience

M MEINTANI, U PRETZLIK & T NUNES, Child Development and Learning, Institute of Education, University of London

This study explored the experience of parents of children who had cancer. More specifically the study aimed to assess parents' perceptions of the helpfulness of behaviours that they tend to use to manage family life with a chronically ill child. These experiences were related to the immediate adaptation to treatment and long term adaptation to treatment. The parents also reported their thoughts about the long-term outcome of their child's illness. Nineteen parents, 17 mothers and 2 fathers in a Hospital in Athens took part. In order to describe how well they were coping, semi-structured one-to-one interviews were conducted. Family functioning including the involvement of the extended family, social support available to the family, and some of the stressful events both practical and emotional they experienced are discussed in relation to themselves and their children. The parents were related to be able to participate and to talk about

issues they felt were important to them.

Academic performance in state and private schools

C MEREDITH & C MALONE, Buckinghamshire Chilterns University College

The study investigated the differences between state and private school children in regard to parental involvement, the amount of homework, television viewing time, and the effects on academic achievement. Primary school children (n=187) aged 6-11 years (mean age 9.10) participated and academic achievement was measured using standardised achievement tests, (SAT's). Analysis found an interaction between the age of the child and the school attended, state school children obtained lower percentages on the SAT's compared to private school children. There was also a difference in parental involvement between the schools, mothers were more involved in the state school. The implications of regular homework and the amount of television viewing are also discussed.

How does sociometric status relate to bullying in infant classes?

C MONKS, PK SMITH & J SWETTENHAM, Unit for School and Family Studies, Psychology Dept, Goldsmiths College, University of London

This study focuses on bullying behaviour in infant classes (four to six years). The aim of the study is to investigate the roles taken by children of this age in bullying (bully, victim, defender and bystander) and the styles of bullying and victimisation experienced at this age (physical, verbal, rumour spreading and social exclusion). This is discussed in relation to gender differences reported in older samples. In addition, the roles taken by children in bullying are further investigated in relation to sociometric status. These findings are also discussed in terms of developmental pathways of bully/victim problems.

Adjustment and coping: A cross-cultural study of British and Japanese students living in England

M MURAO & U PRETZLIK, Child Development and Learning, Institute of Education, University of London

This study investigated psychological maladjustment and coping strategies used by a group of 123 British Lower Sixth Form students in London and 84 Japanese eleventh grade students attending Japanese boarding schools in South East England. Psychological maladjustment measures (Crystal *et al.*, 1994) included the assessment of stress, depressed mood, anxiety, somatic complaints and aggression, and the Kidcope Checklist (Spirito, *et al.*, 1988; Pretzlik, 1997) includes ten possible coping strategies which were related to a stressful event by the students. Findings are discussed in term of students' psychological distress and their coping within and across cultural groups, and in terms of understanding specific events that were perceived to be stressful by them.

'I would like to have a deaf peer in my class': Views from Barcelona

P NEGRE & U PRETZLIK, Child Development and Learning, Institute of Education, University of London

Children's views of deafness as well as children's attitudes towards deafness and deaf children were explored. The literature suggests that integration into mainstream schools itself does not lead to more positive attitudes or better knowledge of deafness. The children (nine- and ten-year-olds) were recruited in Barcelona, Spain. Seven hearing children (four girls and three boys) came from the same classroom from a school without deaf children. The other hearing children (three girls and one boy), their deaf peer and teacher were recruited from a school with deaf children. Qualitative and descriptive analyses were carried out according to topics used for all interviews (e.g. friendship with a deaf

child, views on and knowledge of deafness). Differences were found between hearing children with and without experiences with the deaf community.

The effect of a co-operative learning intervention on the social functioning of children with attention deficit hyperactivity disorder

E NIXON, Department of Psychology, University College Dublin

The aim of this study was to investigate the effect of a co-operative learning intervention on the social functioning and self-esteem of three children with ADHD. The intervention, which involved intensive group work, social skills training and the establishment of a token system, was implemented for six weeks in three regular classrooms, each containing a child diagnosed with ADHD. A variety of questionnaires were administered to all the children, focusing on self-esteem, social support and classroom attitudes. The ADHD children were also observed throughout the intervention. Preliminary findings indicate a positive effect on the children and indicate the viability of this approach.

Attitudes, feelings and experiences of deaf children in an inner London mainstream school

J OLSSON, U PRETZLIK & T NUNES, Child Development and Learning, Institute of Education, University of London

This study describes deaf children's experiences in the mainstream school environment, and more particularly the acceptance by their peers, and it describes deaf and hearing children's view of deafness. Five deaf children and 40 hearing peers participated. The children were from two year 5/6 integrated classes in London. The children were interviewed concerning their feelings about school, deafness and what they like to do when they grow up. Peer-nomination was used to identify friendships and the deaf children's peer acceptance status. Analyses showed that the deaf children feel comfortable in the social environment of the school. It was also found that hearing children have positive attitudes towards hearing impairment in general and their deaf peers in particular.

The effect of working memory load, age and epistemic context on deductive reasoning in children

R PAHIL, S COPELAND & A BRIERLEY, Psychology Dept, Brookes University

This experiment examined the effects of age, duration of vowel sounds and use of 'make-believe' on counterfactual syllogistic reasoning on children aged between 6-11 years. The study predicted age effects and that children would do better on 'make-believe' rather than 'matter-of-fact' syllogisms (epistemic content) and on syllogisms containing shorter duration sounds rather than longer duration sounds. The findings included greater mean scores for syllogisms containing longer duration sounds than shorter ones. The ease of constructing appropriate premise representation and the potential role of imagery were implicated. It was concluded that the younger children worked more as limited-capacity, slow serial processors of counterfactual premises than the older children.

The role of specific characteristics of the Greek writing system in dyslexic children's spelling ability

A PASPALI & J ADAMS HALL, 15-23 Endsleigh St, London WC1H 0DP

The Greek language is one of the more transparent alphabetic languages but has its own characteristics. Greek Language has a great number of multisyllabic and heterographic homophonic words. Developmental dyslexia refers to difficulties children experience in reading and spelling, despite conventional instruction, adequate intelligence and socio-

cultural opportunity. Models of dyslexia relate to deficits in phonology and deficits in working memory. Because of the nature of the transparent orthography spelling in Greek is considered to be less problematic for children diagnosed as being dyslexic than for children spelling in for example English. However, because dyslexic children often have problems with auditory memory and sequencing, it may be that Greek dyslexic children will face particular difficulties because of the polysyllabic nature of the language. In order to investigate this a group of dyslexic and a group of non-dyslexic Greek children with matched IQ, reading and spelling age were examined in a series of spelling tests. Factors such as length and homophonicity were examined in both a spelling to dictation and a proof reading task. The dyslexic children were found to face greater difficulties when word type was taken into account.

Spatial language problems in Williams Syndrome: Evidence from grammatical errors

C PHILLIPS, C JARROLD & A BADDELEY, Centre for the Study of Learning and Memory, Dept of Experimental Psychology, University of Bristol

Individuals with Williams Syndrome (WS) show an unusual neuropsychological profile, involving relatively strong language abilities and severely impoverished nonverbal abilities. Studies have shown however, that language abilities are not entirely spared. We gave 26 individuals with WS the Test for Reception of Grammar. Individuals appeared to have particular problems with items involving a spatial component. The number of errors made by each participant on these particular blocks of items was compared to those in blocks which would typically be harder. Significantly more errors were made on spatial blocks than on some of the comparison blocks, suggesting that individuals with WS may have difficulties with spatial language.

Young children can use aerial photographs in a treasure hunt

B PLESTER, Psychology Subject Group, Coventry University, M BLADES & C SPENCER, Department of Psychology, University of Sheffield

Previous research into children's understanding of aerial photographs has investigated only what children can identify in the photographs. In contrast, this experiment examined whether children could use aerial photographs as representations and navigation aids. 4 and 5-year-old children used aerial photographs of their nursery and school environment in identification and location tasks, and also to find hidden objects on the ground. Results indicate that these children are able to use aerial photographs as representations of their local space, showing functional mapping abilities in real environments.

The effect of intonation on children's understanding of jokes and lies

C RATTRAY & A TOLMIE, Centre for Research into Interactive Learning, Dept of Psychology, University of Strathclyde

Three studies were conducted to examine young children's sensitivity to sarcastic intonation as a cue to disbelieving verbal statements. Children were asked to judge what another person thought was inside a tin, depending on whether or not that person had seen the contents (joke vs lie conditions) and whether a false statement to them about the contents had been made in a neutral or sarcastic tone. In Study 1, children showed sensitivity to the belief implications of intonation, but 4-year-olds only seemed able to do so with lies, and 3-year-olds with jokes. However, studies 2 and 3 indicated that under the joke conditions intonation heightened four year olds' awareness of the visual ambiguity of the tin's contents, making it possible to conclude that the verbal statement was now MORE likely to be believed.

The data suggest 4-year-olds are not only capable of distinguishing the belief implications of conflicting sources of information, but of weighing these up to come to a reasoned judgement, a level of sophistication masked by more constrained tasks.

The effect of menarche on body dissatisfaction in adolescent females

J RODGERS, M CAINE, J CHAVEZ & R MARCKUS, Division of Psychology, University of Sunderland

This study examines the effect of menarche on body dissatisfaction in 31 pre-adolescent and 33 post-adolescent females. Measures of perceived and ideal body shapes were assessed using a figure rating scale; levels of body dissatisfaction were investigated using two adapted subscales of the EDI. Results suggest that although body dissatisfaction was high in both groups no significant differences were reported. Menarche was not found to be a critical factor in the development of body dissatisfaction. Body Mass Index was calculated for each subject. These findings indicate that further research should attempt to identify the mediating factors involved in the development of body dissatisfaction, and supports the need for implementation of an educational health programme targeting early adolescent females.

The development of an interpretive theory of mind in middle childhood

M ROWLEY & EJ ROBINSON, University of Birmingham

We aimed to link findings on children's interpretive theory of mind at around age 7, with work on the development of relativist epistemologies during adolescence. Children aged 7 to 11 years heard vignettes describing disputes about issues where limited information was available. Older children were better at explaining the source of the disagreements and at saying whether they could predict what a third party might say. They also distinguished clearly between 'subjective' and 'objective' disputes when asked whether, and how, the disagreements could be resolved. Only the oldest children acknowledged the legitimate role of subjective interpretation in belief formation.

The self perception of Iranian children

S SHAHIM, Shiraz University

Children's self evaluation has been the focus of enormous attention in education and psychology, but little is known about the cultural differences in the way children perceive themselves. Harter (1982) proposes a model of how children perceive themselves across different domains instead of viewing perceived competence as a unitary construct. Based on this model she devised the Perceived Competence Scale (PCSC) to evaluate four separate domains of perceived competence: cognitive, social, physical, and general self-esteem. The purpose of this study was to investigate reliability and validity of the PCSC in a sample of 10- to 11-year-old Iranian students, and to explore cultural differences. The PCSC was translated into Persian with minor changes in wording. Subjects were selected from elementary schools in Shiraz. Factor analysis was performed on data using principal components analysis followed by the Scree test. Three factors (cognitive, social, and physical) were extracted using Oblimin rotation. The major finding was that Iranian children did not differentiate general self-esteem from other domains of perceived self due to cultural differences discussed in the article. The different domains correlated significant except in physical domain. The Cronbach coefficients alphas ranged from .51 to .83 for different domains.

Language and literacy outcomes of children with specific language impairment at 11 years

Z SIMKIN & E KNOX, Centre for Educational Needs, School of Education, University of Manchester

The long term nature of specific language impairment (SLI) is becoming increasingly more apparent and has implications for clinical practice as well as research. In the present study 242 children with SLI were assessed at 7 years, 8 years and 11 years on a wide range of language and literacy measures.

Large proportions of children were found to have clinically significant language difficulties at 11 years in the areas of: Receptive vocabulary, 23 per cent, Expressive vocabulary, 42 per cent, Understanding grammar, 31 per cent, Correct use of past tense, 3 per cent, Correct use of present tense, 9 per cent, Single word reading, 48 per cent, Reading comprehension, 55 per cent. Interesting correlations were found between both types of reading and a non-word repetition task (0.58 & 0.48); between single word reading and expressive vocabulary (0.64); and between reading comprehension and grammar comprehension (0.60). Different subgroups of SLI, predictive factors and educational placements are also examined.

Children's awareness of respiratory sensations: Associations with age and history of asthma

MJ STEIN, J McNICHOLAS & GM COLLIS, Dept of Psychology, University of Warwick
Interviews were conducted with 44 7- to 8-year-olds and 25 10- to 12-year-olds to determine associations between respiratory awareness, age and history of asthma. When presented with storyboards depicting scenarios in which breathing was particularly salient, older children were more likely to describe the subjective experience of scenario characters in terms of differentiated and localised sensations than were younger children. Older children with a history of asthma were more likely to give a detailed description of what out of breath feels like than younger children with a history of asthma or older children with no history of asthma.

Assessing young children's understanding of multiplicative reasoning

A WATANABE & T NUNES, Institute of Education, University of London, & P BRYANT, Dept of Psychology, University of Oxford

This study aimed to develop a conceptually sound assessment of multiplication reasoning. The test included a range of situations involving one-to-many correspondence, sharing, and Cartesian product problems. The ideas for the items were taken from developmental studies on multiplicative reasoning the item presentation was inspired by the assessment theory of Realistic Mathematics Education. Participants were 275 children, aged 6, 7, 8 and 9 from schools in London and Oxford. Exploratory reliability and validity was obtained using the split-half reliability test. Multiplicative reasoning appears early, at around 6-years-old, whereas other items were still difficult for the 9-years-old children. An order of difficulty within and across multiplicative concepts was found. This assessment is likely to be useful for teaching and learning mathematics and for research purposes.

Answering nonsensical questions: when different children give the same response, do they mean the same thing?

A WATERMAN, M BLADES & C SPENCER, Dept of Psychology, University of Sheffield

In child eyewitness research, an important issue is whether children can provide reliable answers

when questioned. Previous research has found that children will try to answer closed nonsensical questions (that only require a yes/no answer). In this study 5- to 9-year-olds were asked a series of nonsensical and sensible questions, and were asked to explain their answers. Most children tried to answer the closed nonsensical questions. However, different children giving the same response (e.g. 'no') to a closed question provided different explanations for their answers. Some explanations were based on an understanding that the question was silly; others were based on the child accepting the nonsensical proposition contained within the question. Therefore, different meanings may underlie identical responses to a question. The implications of this for interviewing children will be discussed.

Let's be positive: An intervention programme for promoting children's prosocial competence

D WARDEN, D CHRISTIE, H FITZPATRICK, K REID & W CHEYNE, Centre for Research into Interactive Learning, Dept of Psychology, University of Strathclyde,

As part of a research project examining the differing social competencies of prosocial and antisocial primary school children (9-10 years), a teacher-led intervention programme designed to foster children's pro-social thinking has been successfully implemented in eight primary schools. This programme comprises group activities in which children participate in peer group discussions and role plays; these activities focus on their perceptions of prosocial and antisocial peer interactions, on the intentions and feelings of the participants in such interactions, and on possible responses to such behaviours. This paper will present these activities, describe their implementation, and discuss the preliminary results of the intervention.

Is it possible to erase memory in young children?

SJ WILLIAMS & DB WRIGHT, Dept of Experimental Psychology, University of Bristol
Seventy-eight children participated in an interactive cooking event. One day later misinformation (an erased scene) was presented as they watched a short video depicting an identical sequence of events. The children were asked to draw or tell everything they could remember, and were then asked eight direct questions about the event. Drawing during the interview increased the amount of accurate free recall. Being exposed to the misinformation increased the likelihood of a wrong or don't know response to the related direct question, and exposure to the second target facilitated the response. The confidence scale correlates with the accuracy of responses to direct questions.

Profiles of cognitive and language abilities in children with specific language impairment

K WINDFUHR, A SKIPP & G CONTI-RAMSDEN, Centre for Educational Needs, School of Education, University of Manchester

This paper reports preliminary findings of an on going study investigating the cognitive abilities and language development in children with specific language impairments (SLI). Children with SLI were compared to children with normal language development (NLD) on measures of language ability (CELF, Reynell), nonverbal IQ (WPPSI), verbal memory (Recall of Digits), vocabulary (BPVS, EVT) and grammatical awareness (Plural Elicitation Task, Third Person Singular Task). We also investigated the development and usage of verbs and nouns in both groups of children. Importantly, we aimed to test the Critical Mass Hypothesis (i.e. morphosyntactic development is regulated by lexical level). We will report the profiles of cognitive and linguistic abilities of children with normal language development compared to

children with specific language impairments.

Angry or sad? Interpreting children's failure to use intention information in emotion judgements

T WISELY, Postgraduate Pigeonholes, Dept of Experimental Psychology, University of Sussex

Young children appear to have some difficulty in distinguishing systematically between the causes of sadness and of anger (Levine, 1995). Adults, on the other hand, tend to say that a person would feel sad about a negative event that was caused by accident and angry about a negative event that was caused intentionally. Study 1 was a story-based task in which children were asked to predict whether target story characters would feel angry or sad about situations where the target character lost something of value due to the accidental or intentional actions of a second character. The results show that it is not till the age of eight years that children begin to associate anger with intentional and sadness with unintentional actions. Study 2 suggests that it is around the same age that children' primary focus in loss situations shifts from self-related to interpersonal concerns. It is suggested that children may begin to rely on intention information to distinguish between anger and sadness at the age of eight years because that information is interpersonal by nature and has thus become of primary interest.

A new stroop-like measure of inhibitory development: An illustration of typical developmental trends and clinical utility

I WRIGHT, M WATERMAN, H PRESCOTT & D MURDOCH-EATON, Dept of Psychiatry and Behavioural Sciences in Relation to Medicine, 15 Hyde Terrace, Leeds LS1 9LT

This poster describes a stroop-like measure of inhibitory function which, unlike the standard stroop task, uses pictorial stimuli and does not depend upon reading proficiency. Developmental changes in task performance are illustrated with data from 90 children aged 3 to 16 years. These data describe the course of inhibitory development throughout childhood. Data linking task performance and classroom behaviour ratings are also presented. The practical utility of the task is outlined in relation to the measurement of impairment and recovery following childhood traumatic brain injury (TBI). These findings are discussed with reference to the literature on normal inhibitory development and recovery from childhood traumatic brain injury.

'When my child laughs I am feeling well too, he gives me strength to keep on going': Children and their parents talk about coping with congenital heart disease in Greece

A YIANNOULOPOULOU & U PRETZLIK, Child Development & Learning, Institute of Education, London

This study explores the coping patterns of children with cyanotic and acyanotic congenital heart disease while in hospital, in Greece. Understanding children's coping is essential for providing effective support and care. Thirty, 6- to 17-years-old, children and their parents, 29 mothers and 1 father, participated. The Kidcope Checklist measured children's coping in two context: illness and x-ray/catheterisation. To study paternal coping, a semi-structured interview, looking at marital relationship, familial support, distress, discipline, school, future and source of strength, was devised. Children described medical procedures, illness outcome, family separation, and school worries as their stressors. Children's distress and coping differed between the two contexts. Sadness was related to the blame oneself strategy in the illness context. Parental school concerns, teacher's involvement, and parental source of strength differed between younger and older children.

Consciousness and Experiential Psychology Conference

3rd Annual Consciousness and Experiential Psychology Conference: Consciousness and Well-being Abstracts, Wadham College, Oxford, 17–19 September 1999.

The causes of joy

M ARGYLE & P HILLS, Oxford University
This paper surveys the main causes of joy. The effect of love and other social relationships; these can be interpreted by the Schacter model, and extended. Positive emotions are also produced by leisure; new research on the effects of religion, music, TV and also work. A social motivation for this is offered for this. Peter Hills will report part of a study designed to test four theories of leisure motivation; here he describes our attempt to test the 'flow' theory. How many kinds of positive emotion are there, and do they have a different physiological basis? Why are there positive emotions anyway?

The true source of well-being

S BASU
In Sri Aurobindo's thought, consciousness is the inmost reality of everything and in this poise, it is known as The Self. The True Being or Self in man is thus of the same essence as that of The Divine. While the Self has an unevolving aspect that stands above the manifestation, it is also present as a soul-element or Psychic Being which evolves from life to life carrying man's experiences as a nucleus of soul-growth. Ordinarily, the Psychic Being is veiled but it can replace the ego, transform and govern life. If this attempt is made, one starts living at a deeper level of consciousness and experience a sense of wholeness, integrality, peace, unalloyed joy and a true sense of well-being even in the midst of adversities. The quintessence of well-being lies in this shift from the outer being to the consciousness of the Psychic Being.

Influence of Transcendental Meditation on a measure of death anxiety

S BIGGS
The influence of two months of Transcendental Meditation on a measure of death anxiety was examined. The experimental group (n=21) consisted of self-selected members of the general public who attended an introductory lecture on the Transcendental Meditation programme and were subsequently instructed in the technique. The control group (n=18) consisted of self-selected members of the general public who attended an introductory lecture, but decided not to learn the technique. Pre- and post-test measures of death anxiety were obtained using Templer's Death Anxiety Scale. Death anxiety scores were not significantly reduced by the experimental procedure. The findings are discussed in terms of limitations and implications for further study.

Monads, atoms and consciousness

R BIRD, University of Northumbria
Since around the turn of the century it has been widely accepted that the properties of the world can be explained without residue in terms of fundamental particles (though their number and identity has varied at times). There are several difficulties with this view: e.g. if emergence is a real phenomenon then how do new properties appear from simpler constituents which themselves lack those properties? This difficulty applies at any level of analysis, e.g. in the explanation of behaviour in terms of genes, or the explanation of cognitive activity in terms of neuronal functioning. In the alternative model I present here, the constituents of the world are not atoms but self-similar units each of which contains the properties of the whole world. These I call 'monads' in tribute to Gottfried Leibniz, since they

are very like those eponymous units which were described by Leibniz as 'the true atoms of nature' (Leibniz, in GHR Parkinson 1973). Emergence in this view is the result of the arrangement, or sequence, of the monads, a particular property emerging as the result of a particular sequence. The phenomena attributed to interactions of 'atoms' at whatever level, can be better explained in these terms. It is suggested that in this view sequence, and the processes producing sequence, assume an all-important role in scientific analysis and prediction, and the consequences of this view for the psychology of consciousness are discussed.

Physis loves to hide: Cycles of consciousness and well-being

P CLARKSON, Roehampton Institute
Physis or Phusis is an ancient Greek word rich in meaning. It is used to refer to life energy as it manifests in nature, growth and healing as well as in all dimensions of creativity. Physis/physician (as in medicine) and Physics (as in quantum understandings of the world) both derive from it. From the pre-Socratic Heraclitus to the most modern frontiers of Complexity Theory, the name for consciousness at sub-atomic, personal and universal dimensions always carries the connotation of cyclic change. Well-being is not a state of mind that can be achieved in a static way. It is increasing ability to co-ordinate with the cycles of breathing in and breathing out, living and dying, and the rise and fall of civilisation. It has long been known that 'physis loves to hide'. The presentation will focus on the most a-voided part of the cycle, variously called despair, rock-bottom, the void, the abyss, dark night of the soul.

Spiritual practice as perceptual re-education: Why mindfulness and martial arts bring happiness and peace.

G CLAXTON, University of Bristol
Perception necessarily involves a balance between 'bottom up' and 'top down' processing. This 'balance' is variable and strategic. Under environmental pressure to recognise and respond to situations fast, we are best served by a 'diagnostic mode' of perception in which top-down processes play a major role. In this mode one is likely to leap to conclusions, see what is familiar, and err on the side of safety. Where immediate costs and benefits are less urgent, it pay to slip into 'agnostic mode', in which bottom-up processes allowed to proceed in a more leisurely and less 'driven' manner. In agnostic mode, one interacts with the world in a way that is more inquisitive, exploratory and playful. However, in contemporary cultures diagnostic processing may take over from agnostic as the extended default mode, resulting in a way of being that involves more projection, more anxiety, less play, less accurate sensing of body and world, less flexibility and less learning. Spiritual practices of a variety of different kinds can be construed as attempts to draw or jolt the perceptual system out of this protracted, self-referential, diagnostic default mode.

Complexity and the evolution of consciousness

M CSIKSZENTMIHALYI, University of Chicago/Drucker School of Management
The ability to reach optimal experiences is linked to faith in a system of meanings that gives purpose to existence. How can such faith be found at the twilight of the second millennium? An answer may lie in the concept of evolution. An understanding of our evolutionary heritage – the genetic and cultural forces that have formed us – offers a means for restoring a sense of purpose and order that may help us to achieve the 'good life'. The key is to understand the development of complexity in consciousness – what it is, how it

can be nurtured at the individual, interpersonal, and societal levels. Identifying with complexity allows the individual to become part of the evolutionary process and foster the potential inherent in the cosmos.

Self-aware delight: A gift from ancient India for modern psychology

M CORNELISSEN, Sri Aurobindo Ashram, Pondicherry

One of the greatest gifts of the Indian rishis to humanity is the concept of Sachchidananda. This concept was not arrived at by speculation, it is based on experience: the ultimate nature of reality as experienced contains not only Sat, existence, and Chit, consciousness, but also Ananda, self-aware, self-existent delight. Different approaches lead to quite different realisations but all include in one form or another this element of a self-aware delight. The full realisation of Sachchidananda is the result of arduous practice. But as soon as the possibility of this realisation is accepted one can already recognise at every point in life a second road to happiness.

To travel this road, we have to stand back from the situation in which we are involved, we have to widen, deepen and heighten our consciousness and to concentrate on the Absolute in some form or the other. When we begin to learn how to do this, we realise that we have found in ourselves an infinite source of happiness independent from outer circumstances.

The fact that to follow this road can only be taught by example if not by contagion, has far reaching consequences for psychotherapy and the teaching of psychology.

The evolution of the temporal focus of consciousness

G FIELDMAN, Buckinghamshire Chilterns University College

This paper addresses the phylogenetic origins of the temporal focus of human consciousness and how natural selection may have designed this facet of psychological functioning. The time span which present consciousness occupies may be a functional adaptation to the immediate behavioural context in which human beings evolved. Short-term visual memory span rapidly declines after about 2 seconds. This period may correspond to the temporal focus of consciousness.

Consider one person approaching an observer. The oncoming individual could attack or befriend the observer, influencing the observer's survival prospects. Natural selection operates upon the physical characteristics of the individual, including its behaviour. The observer's behavioural decisions may therefore influence their own survival and their ability to pass on their genes. Encountering individuals can lead to diverse consequences, as exemplified by fighting or mating. This, together with the physical requirements of the environment, necessitates time-constrained decisions regarding disparate behavioural strategies. Natural selection may therefore have designed consciousness with its characteristic temporal focus as the context and matrix for effective and integrated real-time decision-making. Thus individuals may choose and utilise appropriate behaviours when dealing with immediate challenges to promote well-being and survival.

Is the relationship between spirituality and physical well-being spurious?

KE HART & CC McCALL, School of Psychology, University of Leeds

Background: A number of investigations have provided empirical support for the notion that medical well-being is positively correlated with

the degree of religiosity or spiritually. Unfortunately, confidence in the validity of these findings may be misplaced because of methodological limitations associated with failures to control for emotion-based response distortion. The present study sought to refine previous research by correcting for a major confounding variable: degree of neuroticism.

Methodology: A diverse sample of 28 males and 53 females residing in South Wales, with a mean age of 36.1 years, completed: (1) the Spiritual Well-Being Scale (SWBS; Paloutzian & Ellison, 1979); (2) the Moos Physical Health Questionnaire (MPHQ; Moos, 1982), a multidimensional measure of self-perceived health status; and (3) the neuroticism subscale of the MPQ (MPQ; Tellegen, 1982), a personality 'trait' index tapping the degree of negative emotionality.

Findings: Zero-order correlations showed that the Existential Well-Being subscale of the SWBS was significantly and inversely related to the Bodily Symptoms subscale of the MPHQ ($r(79) = -.303, p < .01$), and positively related to the Perceived Health subscale of the MPHQ ($r(79) = .405, p < .01$). After statistically controlling for the biasing effects of neuroticism, partial correlational results were less impressive. Existential Well-Being showed a weak positive association to subjective ratings of the 'Perceived Health' ($r(76) = .20, p < .05$).

Discussion: These results suggest that the personality trait of neuroticism serves to confound the inverse association between spirituality and phenomenologically experienced medical well-being. One implication of this finding is that previous estimates of the strength of this relationship may have been spuriously inflated.

Spiritual and secular forgiveness training for people in recovery from addiction: A patient-treatment matching study

KE HART & DA SHAPIRO, School of Psychology, University of Leeds

This paper outlines a programme of scientifically-grounded research that seeks to promote a greater understanding of the processes and outcomes associated with spiritual and secular approaches to facilitating forgiveness amongst angry people who are recovering from addictive disorders. In particular, the paper describes the Leeds Forgiveness for Addiction Recovery Project, a grant-funded three year psychotherapy treatment study that seeks to empirically determine 'what works best for whom.' The secular model implicitly adopts the view of self-as-victim, whilst the spiritual model accepts the tacit assumption of self-as-perpetrator-and-victim. Thus, participants exposed to the secular intervention will seek to use the tools of psychology to bestow or give forgiveness to others (who have harmed them), while participants exposed to the spiritual intervention will attempt to enlist the help of a Divine Being in order to develop the humility needed to confess wrong doing to others and make restitution for the suffering caused. In addition to shedding light on how people forgive, results will also document the ability of forgiveness to shift phenomenological experience from a negative condition to a positive condition. Moreover, research findings should have practical implications for treatment providers concerned with facilitating greater levels of emotional and spiritual well-being amongst their clients. Specifically, counsellors might use the findings from this study to assist them in deciding which type of approach to forgiveness training is best suited for bitter clients who differ in their needs and personalities.

The embodied mind and well-being

J HAWORTH, University of Manchester

'Consciousness is in the first place not a matter of I think', but of I can', Merleau-Ponty (1962). This paper draws on the Embodiment Theory of Merleau-Ponty to explore a person-situation model of well-being, proposed by Haworth (1997). In the Embodiment Theory consciousness is not seen essentially as a mental phenomenon but as a function of the

integrated operation of all the senses. Primary meaning is brought about mainly by pre-reflexive thought in distinction to reflection. This activity theory of consciousness is important for person-situation models of positive subjective states and well-being, such as those proposed by Csikszentmihalyi (1991) and Haworth (1997). The model proposed by Haworth shows that the important influence of nine situational factors, identified by Warr (1987), on mental health was moderated by locus of control (Rotter 1966). In turn, locus of control was influenced by enjoyable experiences, which also had a direct effect on well-being. Rotter (1982) suggests that specific cognitive activities may be used by internal locus of control individuals to enhance and maintain good feelings. Views of the Embodied Mind would also suggest the importance of non-reflective interactions for well-being.

Well-being Workshop

J HENRY, Open University

This workshop invites participants to share experiences of well-being and reflect on the circumstances surrounding them. Each participant will be asked to address a few simple questions around a period of well-being they have experienced and about their personal circumstances at that time. We will also discuss any practices that seem to have helped enhance our sense of well-being, and any practices that have failed to live up to expectations in this respect. In so doing we might illuminate some of the circumstances that seem to accompany well-being, and the part played by attitude, specific practices, and support etc. It will be interesting to compare and contrast the range of experiences, circumstances and approaches raised in this experiential session with the principles suggested by the papers on well-being presented elsewhere in the conference.

Well-being Symposium

J HENRY, Open University

Participants include Prof Mihaly Csikszentmihaly, Drucker School of Management, Prof Michael Argyle, Oxford University and Dr John Haworth, Manchester University.

This symposium is designed to give the keynote speakers a chance to discuss their ideas and work on the psychology of well-being with each other and the audience. Mihaly Csikszentmihaly is famed for his work on Flow, a state of consciousness characterising well-being that has been found in people undertaking diverse activities in a variety of cultures, where skill level and challenge are matched. John Haworth has explored the relationship between work, leisure and well-being, highlighting the importance of work and situational factors for well-being. Michael Argyle has undertaken numerous studies of the correlates of well-being and elaborated on the importance of social contact and support.

An idiographic approach to subjective well-being

S JENCIUS, University of Vienna

Social-cognitive approaches in personality psychology use bottom-up strategies in the scientific investigation of the individual. The goal is to identify a system of processes in the individual and its relation to the sociocultural-environment. One perceives this interactive system as processes that support coherence, consistency, and continuity in personality functioning. The potentially idiosyncratic person is investigated on his or her own terms. Self-knowledge (self-schemas, scripts, prototypes, etc.) is self-organised critically. The result is a constellation of potentially idiosyncratic underlying structures and processes for the necessary adaptive thoughts and actions in the individual. A challenge for psychological assessment, then, is to both measure global individual differences in subjective well-being but to assess the particular constellation of underlying cognitive mechanisms that contributes to an individual's success or failure. This research explores the cognitions of international exchange students living abroad.

Adaptive behaviors and subjective well-being are mediated and regulated by multiple internal cognitive mechanisms (e.g., coping strategies, knowledge of sociocultural norms, self-efficacy beliefs).

An idiographic assessment strategy was employed in an attempt to combine the insights of both trait/dispositional and social-cognitive approaches. Cognitive structures (e.g., self-schemas, scripts) were assessed with respect to multiple situations and challenges. Self-efficacy perceptions and behaviors were assessed contextually. Findings relate cognitive structures to self-efficacy appraisals that, in turn, regulate the behaviors necessary for the individual to adapt to the new challenges from the social environment.

Wholeness is primary: A top-down fractal theory of consciousness and action

K KINGSLAND, TSR International

Most scientific approaches assume that consciousness emerged at a late point in time as a product of complex arrangements of matter, typically an epiphenomenon of brains. This paper presents the view that consciousness relates to wholeness. It is a view adopted by the majority of consciousness researchers within traditional approaches such as Yoga (Kingsland, 1976, 1977) and Mysticism. This use of the term is compared and contrasted with other uses in the consciousness literature, including the idea that consciousness is not a bottom-up emergence but a top-down phenomenon which transcends space and time. Consciousness has the power to draw distinctions. The primitive notion of distinction (Spencer-Brown, 1969) gives rise to seven logical complementary perspectives described in this paper. Issues such as non-conscious processes, multiplicity of entities and independent physical reality are examined.

'Inner' and 'outer' dimensions of well-being: Integrating psychology into the quest for sustainable development

P MAITENY, The Grubb Institute of Behavioural Studies

Sustainability policy and research neglects questions of human psychology, subjectivity and experience – the 'inner' dimensions of individuals. Yet individuals' outward oriented behaviour is an expression of their yearning for psychological and emotional well-being as they attempt to satisfy it in various ways – e.g. through material consumption, lifestyle, and other choices. The ecological and social impacts of these behaviours and choices are also, therefore, projections and inevitable consequences of the same psychological yearning.

Whilst the yearning for this 'inner human sustainability' is psychologically rooted and subjectively experienced, the perceived, and available, means for satisfying it in any particular case are culturally (i.e. inter-subjectively and collectively) constructed. Cultural beliefs, ideologies, myths, theories and so on are the 'inner' dimensions of collectives. Individual and collective behavioural change is, therefore, dependent on changes in the ways in which individuals seek to satisfy their inner needs and the cultural frameworks they choose to live by. The paper explains why policy, if it is to be effective in the long-term, must be attentive to inner psychological and cultural dimensions of human beings, frameworks and beliefs about how needs and wants will be satisfied and how the latter change as they are found to be wanting as ways of achieving individual well-being. Finally, it is proposed that a personal sense of connectedness and systemicity may be the experiential basis for taking responsibility for one's own role in achieving both inner psychological and outer socio-ecological sustainability. Policy-making is itself a cultural activity that seeks to respond appropriately to changes in the external world within the constraints of powerful cultural (collective) and psychological (individual) values and priorities.

Inner and outer sustainability are therefore mutually dependent. A systemic approach to sustainability requires consideration of both and how they interrelate.

Theatre and consciousness

D MEYER-DINKGRAFE, University of Wales, Aberystwyth

An MA scheme has been developed in response to the increasing recognition of the importance of consciousness for human life in general and for the art form of the theatre in particular. Theatre and Consciousness will discuss a number of approaches which make use of both traditional and more recent developments in the understanding of the human mind as relevant to the writing of drama, the concept of theatre, its position in history, and interpretations of the dramatic text. In the module, Theatre and Altered States of Consciousness, students will encounter theatre from the perspective of what can be ascertained as the main aim of much alternative, including intercultural theatre practice over the last century: to achieve a transformative change of consciousness in performers and spectators alike. The third module puts the theory into practice. In workshops and masterclasses, various traditional and new Western and Indian techniques of affecting consciousness of performer and spectator are explored.

Consciousness studies and engineering

M OKUMA & I TODO, Yokohama National University

Engineering systems for well-being in an open world requires the use of new and unique knowledge. This paper proposes that knowledge of human mental capabilities, as revealed by consciousness studies (CS), can be applied to engineering. It is proposed that circulating knowledge between these disciplines will be beneficial to both. Trimodal Theory (R. Stevens) offers a super-ordinate framework for this circulation. Engineering can be viewed as comprising three levels:

- 1 A strategic planning level, where activities define the direction and purpose of a project. Problems are related to values, though science is not a normative system (J Pickering). This stage involves a large degree of freedom and ambiguity. Engineering for open worlds requires management to employ creativity and intuition (BB Johansson), found in the fringe process between conscious and unconscious domains (B Mangan).
- 2 A tactical control level, where activities specify systems architecture for detailed design. A strategic plan is needed for applying technology specifically to open worlds, as well as conventional techniques, once consistency requirements have been met.
3. A construction level, which is beyond the scope of this paper.

Self, world & well-being

J PICKERING, Warwick University

Psychology, biology and science in general are developing in ways that point to Bergson, Whitehead and other process-oriented philosophers, as the builders of the metaphysical foundation for scientific inquiry.

Consciousness emerges from dialectical interactions between embodied cognitive skills and an environment which they shape and by which they are shaped. This emergence is best described in the vocabulary of dynamic systems theory, whose metaphysical import is that of causal spread.

These insights are central to Bergson's philosophy, as was his radical opposition to representationalism. This, like his view that perception is integral with action is in line with recent research in and around cognitive science, particularly artificial life. It also has strong resemblances to the ecological approach of James Gibson, which emphasises the mutuality of the cogniser and the cognised. These developments will help to change our view

of the relationship between the self and world. This in turn will help to increase our sense of well-being by making it more possible to feel 'at home' in the environment we have created.

Well-being and chronic pain – the transformation from 'doing' to 'being'

D PIKE, West Midlands Clinical Psychology

Many patients with chronic pain make their situation worse by overdoing physical activity causing peaks of pain which may well initiate permanent neural changes. Commonsense advice to reduce this does not help. Their behaviour is fuelled by specific attitudes, habits and the continuing attempts of the medical profession to help. Pain management programmes and individual therapy can help restore quality of life and this paper will try to tease out the personal transformation that such programmes seek to spark off.

The essential process is one of having to move from 'Doing' to 'Being' following an acceptance of the permanent reality of their condition. Stereotypical self images hinder this process. Waiting for medical investigations and 'magic cures' also serves to undermine initiative and self responsibility and can precipitate a catastrophic collapse in quality of life.

Insight: The way to happiness?

G RUBINSTEIN, Netanya Academic College, Israel

According to the classical psychoanalytical school, and the various psychodynamic approaches deriving from it, insight is essential for an improvement in the client's well-being. The author presents several cases from his clinical work with other psychotherapists who have been in long-term insight therapy and internalised the call for insight both as a result of their personal therapy and their professional socialisation. They have done so to such a level that a question is raised as whether too much insight does not constitute a barrier to their happiness or well-being.

The author attempts to discuss this question, using the concept of locus of control, which evolved in the context of Roter's social learning theory. He raises the question of whether internal locus of control, which is an equivalent to developing insight through the psychotherapeutic process, guarantees a better life. Perhaps people who are characterised by external locus of control and use primitive defense mechanisms may enjoy a higher level of subjective well-being, even if it is considered less developed and iprestigious from a psychological point of view.

Cubist consciousness

G SAUNDERS, University of Bath

Not so much a paper, more a work in progress; a series of quick sketches exploring a cubist take on mind and being. Drawing on themes of imagination and confinement from my recent research thesis, these fragments juxtapose the histories of modern psychology and modern art. In this piece, the Cubist movement is articulated with pre-World War 2 psychology; looking in particular at how conventional disciplinary orders break and remake the fabric of a person. With the emphasis on movement, the importance is on what is true being true only for its time. What endures is that which can be refabricated, put together with a different adhesive. This has implications for juggling the making up and making out of a postmodern, post-World War 2, story of mind.

Obstacles to transformation in medieval Christian mysticism: A case study of Saint Catherine of Siena

E SHACKLE, Plater College, Oxford

Feminist writers (Jantzen, 1995), psychologists of religion (Vergote, 1978) and psycho-dynamic psychologists (Kristeva, 1983; Meissner, 1992) have applied modern psychology to the study of medieval and post-reformation Christian mystics. Most psychologists would agree that any

psychological dynamics that might underpin the mystical transformation process could not have been understood prior to the twentieth century. Hence these (unresolved) psychological dynamics could be an obstacle to the successful completion of the transformation process. Catherine of Siena (1347-1380) has not attracted much psychological scrutiny. In a series of unpublished papers (Lund, 1994; LSE 1999), Shackle has suggested that the key to the psychological understanding of Catherine of Siena is the fact that she was a twin who was traumatised by the loss of her twin in early childhood. Currently there is ample evidence (Piontelli, 1992; Woodward, 1998) for suggesting that the effects on the surviving twin of the death of the other at any age are long-term and peculiar to twins. Catherine's mystical life with Jesus can be understood as an attempt to reconnect with her lost twin through her relationship with a divine twin.

Openness and its problems

R STEVENS, Open University

By 'openness' I refer to the human capacity to generate novel thoughts and actions which have not been specifically laid down by learning or biology.

Linguists view openness as a unique characteristic of human language (Hockett 1972). Trimodal theory (Stevens 1998) conceptualises openness as the core of tertiary mode action and as an emergent property made possible by human capacities for reflexivity & generativity. I shall first explore the nature and origins of openness and its crucial role in personal and social life. One problem is to conceptualise openness. Given that no matter possesses such a property, this poses difficulties for a psychology which assumes determinism and the procedures of natural science. A second problem is practical. What basis can we use to generate experiences and actions which are potentially open? Traditionally this issue has been the province of religion and/or moral philosophy. But what is the role of psychology here? Some attempts have been made to address this (e.g. Rogers 1951, Maslow 1987, Csikszentmihalyi 1997). But even humanistic and existential psychologies which have tried to accommodate the notion of openness beg key questions. This paper is designed to stimulate discussion rather than propose answers.

Ancestral consciousness and well-being

N TOBERT, Open University

This paper uses anthropological case-studies to explore the hypothesis that there may be a correlation between our beliefs about consciousness after death and our daily well being. The belief systems of a number of cultures include the notion that once the physical body dies, consciousness and some form of identity continues. Broadly speaking these belief systems envisage two types of death: the 'good' death in which the dead person becomes an ancestor and regenerates as a new baby; and the 'bad' death in which the dead person remains earth bound and afflicts the living.

Within these belief systems, the living person's experienced relationship with the 'ancestor' may affect their health and well being in various ways. The 'ancestor' may be felt to 'overshadow' living relatives (as in multiple personality disorder), or may appear as an apparition to the recently bereaved. Where the dead person had, during life, experienced hidden grief or unresolved trauma, people from subsequent generations may appear to manifest this grief or trauma in their memory or behaviour, causing trans-generational sickness (or even psychosis, according to certain French psychologists.) Within these belief systems, neo-shamanic experiential activities may help to resolve the experienced relationship between the living person and the dead ancestor with benefits to the living person's well-being.

Consciousness, ethics and dementia

S TORRANCE & D MARKS, Social Science and Health Research Centre, Middlesex University

Much philosophy of mind views consciousness merely as a form of higher-order cognition. We propose an alternative model of mind, which distinguishes between mind-as-producer and mind-as-consumer. Cognition relates to the former aspect; the way that consciousness relates to the latter.

Research in consciousness routinely misses the key role played by notions of consciousness, self, personhood, etc., in our ethical thinking. Phenomenal properties of mind can be seen as the crucible of our evaluative attitudes. There is a deep relation between phenomenal consciousness and ethical motivation. I do not recognise my selfhood, nor yours, as a fact merely, but as a centre of concern.

We seek to examine how these ideas may be applied in practice. We take dementia as a case study, building on recent studies evaluating care practices in Alzheimer's across Europe.

Communication strongly conditions the way personhood is constructed; dementia narrows the channels of conventional verbal communication. So a current project concentrates on non-verbal modalities of expression, such as touch, music, picture-making, etc., in preserving a sense of selfhood or coherence in people with dementia. The dementing mind raises important conceptual and ethical issues – what kind of consciousness or selfhood remains with, or is recoverable in, the person with dementia? How is worthwhile quality of being to be assessed? We thus see a two-way relation between practical work on communication and expression in dementia and the philosophical understanding of consciousness, personhood and ethics.

The evolution of consciousness

M VELMANS, Goldsmiths, University of London

Theories about the evolution of phenomenal consciousness may be classified into continuity and discontinuity theories. Discontinuity theories claim that consciousness emerged at a particular point in the evolution of the universe. They merely disagree about which point. Some think consciousness 'switched on' only in humans, for example once they acquired language or a theory of mind. Some believe that consciousness emerged once brains reached a critical size or complexity. Others believe it co-emerged with the ability to learn, or to respond in an adaptive way to the environment. Following neo-Darwinian principles, most claim that the emergence of consciousness enhanced survival fitness.

However, close scrutiny of the processes that actually carry out analysis, storage, transformation and output of information in the human brain does not support the view that first-person phenomenal consciousness is required for information processing. The same functions, operating to the same specification, could be performed by a non-conscious machine. The physical world is, in any case, causally closed. Investigation of the way conscious phenomenology actually relates to so-called 'conscious processing' confirms this view. The detailed operations of most processes that we

think of as 'conscious' are not available to introspection. And the conscious experiences themselves seem to come too late to affect the processes to which they most obviously relate. Given this it is not easy to see how conscious experiences confer a third-person, reproductive advantage by enhancing the processes to which they most obviously relate. Nor do any of these theories explain what it is about such adaptive functions that suddenly 'switches consciousness on.' Continuity theorists do not face this problem for the simple reason that they do not believe that consciousness suddenly emerged at any stage of evolution. While the forms of consciousness evolve as the forms of matter evolve, the existence of consciousness may be as primary as the existence of matter. As Charles Sherrington suggests, human consciousness may just be a 'development of mind from unrecognisable into recognisable' (from Velmans, 2000, *Understanding Consciousness*, Routledge).

Painful lessons: An evolutionary approach to the hard problem of subjectivity

I VINE, Interdisciplinary Human Studies, University of Bradford

Conscious well-being and its opposite can evidently play fundamental roles in our subjective lives. Affect appears to direct voluntary actions which impact upon bodily well-being and ill-being. Yet the unsolved evolutionary mystery is how an approach/avoidance continuum of feelings yielded increments in inclusive fitness. A radical analysis by Macphail (1998) concludes that even pain is absent in non-humans and infants. Feelings emerge as epiphenomenal by-products of the language-dependent self-awareness which is demonstrably adaptive. But it is argued that such higher-order experience is no less vulnerable to Chalmers' (1995) 'hard problem'. Our best explanatory bet remains with rigorous examination of basic affects like pain. Several pointers suggest how primitive affective experiencing could have evolved to guide intentional behaviours.

Spiritual consciousness and health

L WILCOX, California State University, Sacramento

In the last 15-20 years, a number of well-planned and sound research studies have demonstrated a clear correlation between spiritual practices which affect the psyche, and physiological and mental well-being or health. For example, significant relationships have been found between meditation practices and numerous physical and mental states, from incidence of mental illness to rate of DNA repair, as well as actual illness and mortality rates. There is a significant correlation between frequency of attendance at services of religious institutions and various mental and physical health correlates. Prayer has been found to be associated with a number of significant positive physical health outcomes, including survival after major surgery. This paper will review and comment on these studies and on the agreement of their findings with various theoretical viewpoints. For the purposes of this paper, spiritual consciousness will be defined as a state of consciousness resulting from experiencing

practices historically used by the major religious traditions to heighten spirituality, both Western: Judaism, Christianity and Islam, and Eastern: Hinduism and Buddhism.

Intuition: Preserve of a creative minority or basic cognitive process?

L WOOLHOUSE, Univ. of Hertfordshire

This paper addresses the issue of the existence and nature of individual differences in the experience and use of intuition. Opinions on this issue range from intuition being the preserve of a creative minority to intuition resulting from a basic cognitive process that is equally accessible to all. In this paper, intuition is presented as a phenomenal experience of knowing based on the aggregation of unconsciously represented associations, which is used to guide decision making. I present my recent findings on the relationship between experience and use of intuition (measured within an implicit learning framework) and the Jungian Psychological Type preferences. These findings suggest that the phenomenal experience of intuition, in the form of feeling of knowing, is available to all. However, certain preferences lead people to mistrust and ignore these experiences and to seek more conscious, concrete information with which to guide decision-making. It is argued that these results reconcile the differing views with regard to individual differences in intuition. These findings are discussed in relation to recent proposals by Lewicki, Czyzewska and Hill (1997) regarding the existence of different styles of information processing which underlie differences in the phenomenal experience of perception.

Creativity in ordinary people? Contributing theory and implications for research

P WORTH, Open University

Can we consider 'ordinary' people to be 'creative'? A significant proportion of the research into the nature of creativity has focused on the exceptional creative individual, and the 'genius'. It is suggested it comes from a tradition of believing creativity is given to only a few individuals with access to a 'muse' or the 'divine'. Whatever the source of this perspective it remains that 'big' creativity is seen as a contribution which changes a complete domain of knowledge, and is recognised by the 'field' or judges.

This approach has the implication and consequence of suggesting that creativity is a limited and narrowly available resource.

If creativity is found in 'ordinary' individuals how might it be defined?

This paper will examine definitions of 'ordinary creativity'. It will refer to researchers who have conducted work in this area – and describe how little research this actually constitutes within the overall work on creativity. It will propose that a number of existing definitions used in the study of 'big' creativity can be used in a localised context as a means of researching 'ordinary creativity'. The paper will close with a summary of benefits proposed for creativity in the context of everyday life.

London Conference

London Conference of The British Psychological Society, Institute of Education, 20-21 December 1999

'Intelligence' for teachers

P ADEY, King's College, London

This paper describes the development of ideas of 'intelligence' in teachers engaged in an extensive professional development programme intended to introduce them to the methods of teaching for

cognitive acceleration. Preliminary ideas are elicited in an open discussion format. During the programme, various theories are introduced and explored, and related to pedagogic practice. At the end of the two-year programme, teachers are invited to express their models of the nature of the mind, including specifically the nature of intelligence, using diagrams, words, or other means of expression. The paper looks at the development of teachers' ideas and consider the implications for pedagogic practice and the curriculum.

Can oral examinations improve the psychological validity of assessment?

A AHMED, A POLLITT & L ROSE, UCLES

Oral assessment has often been disregarded due to problems of reliability. However, it may provide a more valid way of assessing candidates' level of knowledge than the widespread method of written assessment. Oral assessment offers the opportunity for the marker to enter into a dialogue with the candidate, and to use strategies such as prompting

which can improve communication with the candidate. It also involves different time constraints from written examinations. At present, other than in Modern Languages, oral tests are only used in Certificate of Achievement (CoA) examinations, but they may be appropriate at other levels. Questionnaires were sent to teachers carrying out the oral examination for Geography CoA, and 4 teachers and 16 students were interviewed. Transcripts of 18 of the teachers' orals have been analysed in detail to discover more about the language used, and the relationship between oral and written grades has also been investigated.

The general and cognitive developmental dimensions of intelligence

S DAVIES, M ANDERSON, University of Western Australia & P RABBITT, University of Manchester

Recently it has been argued that Spearman's *g* reflects the 'executive' functions associated with the frontal lobes. This sits uneasily with theories that attribute individual differences in *g*, or IQ, to differences in speed of information processing. In contrast, it maps onto theories of cognitive development that attribute changes in *g* to changes in executive functioning. In 116 children (aged 6-11), we found performance on a frontal (executive) function task had both IQ (speed) and age (executive) related components. On a version of the task that removed a speed confound, age remained the only significant predictor. This supported our hypothesis that *g* is two-dimensional.

Mothers-in-law and daughters-in-law: Friendship at an impasse

T APTER, University of Cambridge

Interviews with 20 mothers-in-law, 14 fathers-in-law and 32 daughters-in-law and sons-in-law, and observations in 12 families, show that the daughter-in-law/mother-in-law relationship is most likely to be troubled. A discourse analytic technique shows that complaints by the daughter-in-law centre on a mother's-in-law implicit and explicit expectations that she will fulfil traditional wifely roles, which challenge both the value of her work outside the home and her competence within the home. Mothers-in-law describe disappointment at not being able to forge a friendship with a daughter-in-law and fear lest the poor relationship with a daughter-in-law alienate them from son and grandchildren. This paper focuses on the issues involved in the conflict.

Are exam standards all in the head? Experiments with examiners' judgements of standards in A level exams

J BAIRD, AEB

The government Code of Practice for A level and GCSE examinations stipulates that examination standard setting should be carried out using previous year's examination scripts at the grade boundaries (archive scripts). Thirty-nine A level English literature and 46 A level Psychology examiners participated in a study in which the provision of archive scripts was varied (none, good or poor examples of grade E or grade D). Examiners graded examination scripts, rated how difficult it was to do this and set a minimum mark for a grade E. English literature examiners' grading judgements were not influenced by archive scripts, but psychology examiners judged scripts to be worthy of a grade E more frequently when they were supplied with good grade E archive scripts. The results are discussed in relation to the possible cognitive processes underlying the different approaches in the two subjects (categorisation and similarity judgements).

Interval timing in starlings: The effects of dopaminergic drugs on clock speed

M BATESON, University of Newcastle-upon-Tyne

We investigate the effects of dopaminergic drugs

on the speed of the interval-timing clock in European starlings (*Sturnus vulgaris*) using a temporal reproduction task that is a modified version of the peak procedure. The dopamine agonist, methamphetamine, produces an immediate, proportional rightward shift in the timing functions compatible with a slowing of the clock. In contrast, the dopamine antagonist, haloperidol, produces an immediate leftward shift compatible with the clock being sped up. These results support previous work on rats and pigeons in suggesting a general role for dopamine in the control of clock speed. However, it is an open question as to why the observed effects in starlings should be in the opposite direction from those found in the other species studied.

The behavioural theory of timing: 11 years and counting

L BIZO, Southampton University

The behavioural theory of timing (Killeen and Fetterman, 1988) assumes that the rate at which a pacemaker emits pulses is controlled by variables that affect arousal, such as the rate of reinforcement. The theory also assumes that an animal's response patterns and behaviour might function as overt stimuli by which the passage of time may be judged. Essentially the animal's behaviour acts as the hands on a clock. It is assumed timing is based on the conditional discrimination of mediating behaviours (adjunctive, superstitious, interim, or terminal), that are correlated with one or more hypothetical states (Killeen and Fetterman, 1988). A number of experiments have tested these assumptions with varying success. Generally these experiments supported the predictions of the behavioural theory of timing, although recent findings that fail to support the model are discussed.

The role of orbitofrontal cortex in psychopathy

RJR BLAIR, Institute of Cognitive Neuroscience, London

The present studies investigate the role of orbitofrontal cortex (OFC) in developmental and acquired psychopathy. Adult psychopathic individuals performed significantly poorer than controls on the reversal learning component of the ID/ED task. The reversal learning component allows an assessment of the integrity of OFC. However, 20 children with psychopathic tendencies and 20 matched controls were presented the same task, and there were no group differences in performance. Adult psychopathic individuals may show OFC dysfunction, but the fact that children with psychopathic tendencies do not implies that this dysfunction in the adults cannot be the primary cause of their disorder. An individual with acquired psychopathy following damage to OFC has a selective deficit in processing angry expressions and the implication of these expressions. A further study revealed that the neural circuit that processes angry expressions is selectively disrupted by the administration of diazepam. These results suggest that the deficits underpinning developmental and acquired psychopathy are different.

Stress among managers in the NHS

C BORRILL, University of Sheffield

The costs to organisations if managers do not function effectively in their role are considerable. Explanations and causes of ineffective management are many and varied, but one of the most plausible and proven reasons is that they are suffering from psychological ill health, stress. This paper presents evidence that the prevalence of stress is higher among managers working in a public sector organisation, the NHS, than their counterparts in the private sector and discusses this as a consequence of the more complex environments which characterise public sector organisations. Evidence is also presented which suggests that the prevalence of stress is higher among NHS managers than other groups of staff in the NHS. The sources of work-related stress for these managers is discussed and suggestions

given about the changes in work environments which should be made to reduce stress.

Time processing, human cognition, and developmental disorders

J BOUCHER, University of Warwick

Intelligence, language, generativity, and theory of mind are amongst the psychological functions which distinguish humans from other animals. There is no agreement as to the psychological changes (or the physical changes, or the environmental pressures) involved in the evolution of these capacities. It is argued here that extended and enriched biopsychological time processing capacities enabled early man to encode temporally organised memories of complex, temporally extended events from which to establish a rich, temporally organised data base of categories, concepts, and rules of occurrence. This, it is argued, lays the basis for language, generativity, and for theory of mind. It is further argued that the results of selective deficits in this extended and enhanced time processing system are manifest in developmental disorders such as specific language impairments, autistic spectrum disorders, and some types of general learning difficulties.

Memory and attention in summer and winter at 69°N

T BRENNEN, University of Tromsø, Norway

There is growing evidence that affect in humans swings over the annual cycle. In winter there is a tendency to depression, with remission in summer, and this effect is claimed to be stronger at higher latitudes. This study investigated whether cognition also has a circannual swing, by testing the cognitive processes of 100 participants living at 69° north. Participants were tested in summer and winter on a range of tasks requiring memory and attention. The seasonally-counterbalanced design and the very northerly latitude provide optimal conditions for detecting any impairments of cognitive performance in winter. The large database gives no grounds for concluding that cognitive performance in winter is worse than in summer. These results are consistent with those from studies of the menstrual cycle, where there is also a dissociation between effects on mood and effects on cognition.

Emotional memory: Separating content and context

B BRIERLEY, N MEDFORD &

A DAVID, Institute of Psychiatry, London

This test demonstrates that emotional, arousing words are remembered more easily than neutral words, and that emotional context enhances memory for neutral words. Equal numbers of emotional and neutral sentences are read aloud by the subject – the tone of the sentence is determined by the inclusion of an emotional or neutral target word. Following a five minute delay, the subject is presented with trios of words, one seen previously plus two distracters, and performs a forced choice recognition test. There are four categories of recall words: 1. Emotional targets; 2. Neutral targets; 3. Neutral words embedded in emotional sentences; and 4. Neutral words embedded in neutral sentences. Memory for the emotional targets is superior to neutral targets; of most interest, memory for neutral words embedded in emotional sentences is superior to the same neutral words embedded in neutral sentences. The study demonstrates that emotional context enhances memory for neutral words.

Hypnotic suggestibility and non-analytic cognition

R BROWN, Institute of Neurology,

The notion that hypnotic suggestibility is related to a non-analytic style of cognition is widely endorsed within the field, despite a lack of conclusive empirical evidence in support of this view. This study attempts to provide an assessment of this idea using a number of measures obtained from general psychology. Seventy-four students were presented with the Harvard Group Scale of Hypnotic Susceptibility

and four putative measures of a non-analytic cognitive processing preference: the Rational Versus Experiential Inventory, the Inventory of Learning Processes, the Human Information Processing Survey and a Triad Classification Task. Correlation analyses demonstrate that hypnotic suggestibility is positively related to a preference to a non-analytic style of cognition, a result extending across all measures of processing preference. Multiple regression analysis indicates that 18.4 per cent of the variation in hypnotic suggestibility is attributable to a preference for non-analytic cognition, supporting the notion that non-analytic processes are partly responsible for hypnotic responses.

Sharing the burden – teamwork in healthcare

A CARTER, University of Sheffield

This paper explores the question: if people work in teams, do they suffer less stress as a consequence? Two studies report recent work in secondary healthcare. First, levels of psychological stress (GHQ) are examined with 193 secondary healthcare teams (SHCT). The caseness level is 23 per cent, compared to 27 per cent for secondary healthcare workers in general, and 17 per cent for the general working population. Significant negative relationships are seen between team functioning and stress. Second, 2263 individuals completed measures of stress and work characteristics. Participants are grouped into those not in a team, a clearly defined team, and a pseudo team. ANOVAS and post-hoc comparisons reveal those in clearly defined teams report lower levels of stress and higher job satisfaction. Applications of these findings are discussed with reference to barriers to team-working that exist in the health care environment.

Organisational identification, job satisfaction and perceived stress

T CASSIDY, Coventry University

The effects of organisational identification were explored in two separate studies across four organisations. In Study 1 (n=115) organisational identification and work ethic were the best predictors of job satisfaction. In turn participants who were less acquisitive and scored higher on mastery and status aspiration had a stronger organisational identification. In Study 2 (n=126) problem-solving style was a mediator of experienced stress levels and those with more positive problem-solving styles had a stronger organisational identification and were more optimistic.

Pornography and the sexual body

K CICLITIRA, Middlesex University

The media have become increasingly sexualised and 'pornographic'. Eroticised female bodies are more frequently represented than male bodies, and most sexual imagery continues to represent a masculine, heterosexist view of what is sexually desirable. This paper, based on analysis of interviews with 40 women, explores how women negotiate sexualised and often racialised images of women and men, both in pornography and in mainstream media. These images make an impact on women's perceptions of their bodies and on their sexual behaviour. Women also engage with media-produced body-images in complex and unexpected ways. While top-shelf porn magazines produced for women do not achieve sustained levels of consumption, women view images produced for men (including the 'gay male' body, and the 'lesbian' body in heterosexual porn) in transgressive ways. This paper considers psychological aspects of how pornography can affect women's sexual identity both negatively and positively.

Time for statutory registration: Research and recommendations for the ethics and complaints procedures of psychology and psychotherapy

P CLARKSON, Surrey University & G LINDSAY, Warwick University

The BPS/Slade case (repeated sexual abuse of

patients) and the February High Court Judicial Review of the UKCP (organisational abuse of ethics and complaints procedures with intimidation of complainant) have aroused a great deal of media, public and professional concern. At the moment there are proposals – including a private member's bill – for statutory registration of psychologists and psychotherapists. Therefore studies of recent relevant events, combined with research reports from (a) the Prevention of Professional Abuse Network (POPAN), (b) from research findings about BPS psychologists and research findings (c) about UKCP psychotherapists are of particular interest to Government as well as to every training organisation, practitioner, supervisor, manager, trainee psychologist and psychotherapist – along with many members of the public. This session explores these themes from theoretical, empirical and experiential perspectives.

Sources of self-esteem and identity themes in a 20-year longitudinal study of ageing

PG COLEMAN, University of Southampton

Self-esteem is the central indicator of well-being studied in the Southampton Ageing Project (1978-98). The instrument employed throughout the study, which is derived from an original Dutch measure, also assesses sources of self-esteem on the basis of illustrative examples provided for self-esteem ascriptions. Additional data on the self has been collected at later observation points. Mean self-esteem in the sample has remained constant until the end of the eighth decade, declining from there on. Variables which predict a maintained high level of self-esteem over ten years include numbers of activities, self-perceived activity level, and mention of people other than family members as sources of self-esteem. Although over time family relationships decline in mention as a source of self-esteem in the sample as a whole, they remain by far the most important identity theme in advanced old age.

Self and identity in advanced old age: Validation of theory through longitudinal case analysis

PG COLEMAN, C IVANI-CHALIAN & M ROBINSON, University of Southampton

Case studies drawn from a 20-year longitudinal study of ageing are examined for the support they provide to two theoretical viewpoints on the self in later life: one focusing on management of self-esteem, the other on development of identity as story. The five cases selected for scrutiny represent diverse trajectories of self-esteem. They furnish ample illustrations of certain key aspects of both theories, including assimilative processes of coping, depression related to absence of accommodation, maintenance of life story themes, and life review processes. They do not, however, give strong support to the dichotomy, drawn within both theoretical models, between younger and older old age. Examples of accommodation, disengagement and self-transcendence, hypothesised to typify advanced old age, are relatively few in number and emerge only towards the very end of life. It is argued that examination of prototypical cases provides a useful approach to validating and developing theory.

Lest we forget: Remembering in time

PG COLEMAN, University of Southampton

Inability to forget can be as much a source of problems as memory failure. In later life traumatic and disturbing memories often return in vivid form as the defences of a busy working life subside. Yet it is also to older people that we have traditionally looked for the transmission of culturally important memories, a historical legacy producing destructive as well as constructive effects over many generations (witness Ireland and the former Yugoslavia). As they are processed into narrative form, memories become both definers of individual identity and cultural vehicles. This presentation draws on research on war memories to consider the plasticity of the processes involved. Under what conditions can troublesome memories be transformed into

healing narratives? Are there limits to the reworking of negative experiences? Must identity defining stories always be divisive?

Time, management and culture

P COLLETT, University of Oxford

This paper presents the results of a study on the perception and use of time by managers in six European countries. In each country managers are interviewed about their perceptions of time, and their definitions and attitudes to punctuality, and meetings are observed to see how often and how late people arrive. Analysis of the data reveals that differences between countries at the levels of attitudes are not consistent with those at the level of behaviour. The distinction between monochronic and polychronic cultures is not supported by the study. The study also shows that, in their attitudes to time, French, German and British managers do not always differ from each other in ways that are consistent with either theory or popular stereotypes. Theory and stereotypes are supported, however by observing how punctual people are.

The flexibility of social identity

S CONDOR, Lancaster University

This paper considers accounts of the 'flexible' nature of identity within the currently-popular social identity and self-categorisation approaches to group perception and action. It is argued that these perspectives overlook both the existence of temporal change within particular social episodes (including the research episode), and also the temporal linking of social contexts. Both of these issues are considered with reference to conversational data pertaining to national identity. Conversation-analytic and ethnomethodological techniques are used to illustrate both the radical flexibility of identities within micro-time, and also the lamination of identities and contexts within a single moment in time.

Experiences of dyslexia: Comparing the attitudes of dyslexics and non-dyslexics

S CONNOR & S McDOUGALL, University of Wales Swansea

While a great many studies have examined the causes of dyslexia, little research has examined the thoughts and feelings of the dyslexic individuals themselves. Research to date suggests that schooling can be a stressful and unhappy experience and that self-esteem may be affected. These studies, however, have focused entirely on dyslexics and have ignored the possibility that individuals who are not dyslexic may also have negative experiences of school. In this study, the attitudes of dyslexics and non-dyslexic teenagers to schooling and dyslexia were systematically compared. Our findings suggested that while dyslexics felt under pressure at school, and had mixed feelings about the help which they received, they were equally happy at school when compared to their peers. Furthermore, their peers appeared to have a reasonable awareness of dyslexia and its associated problems.

The experience of time: Measuring the effects of colour and time of day on duration estimation

N COOPER, C LOVEDAY & M BALDWIN, University of Westminster

The Storage-Size model of duration experience is re-examined to see if the number of events in a given interval can influence the perceived duration of that interval. In this instance, colours are used as events. Specifically, that the greater the number of colours shown, the longer the estimation of duration of the presentation of the colours. Furthermore, in the light of studies suggesting a role for dopamine in the workings of an internal clock mechanism within the brain, and bearing in mind proposals concerning the fluctuations of aminergic systems throughout the day; the tests are carried out in two conditions: morning and evening. The results reveal an interaction between the number of colours and the time of day. Participants tended to

overestimate duration (as the number of colours increased) in the evening and underestimate duration in the morning. As a result, recommendations are made for future research.

Maternal attributions about behaviour problems in their own and other children

D CORNAH, E SONUGA-BARKE & J STEVENSON, University of Southampton

Attribution theorists propose that causal attributions play a central role in predicting behaviour as individuals use them to understand, control and master their environment. A social cognition approach to the understanding of developmental psychopathology, therefore, examines the role played by the beliefs parents hold about the causes of their child's behaviours. When parents perceive a behaviour to be more intentional, they are more upset by it and more likely to endorse power-assertive discipline techniques. The present examines the extent to which the 'fundamental attribution error' may also apply when mothers are explaining their own child's or another child's difficult behaviours. One hundred mothers completed four questionnaires comprising measures of maternal mental health (GHQ-12), child's behavioural status (SDQ), attributions for own child's difficult behaviours and attributions for a hypothetical child's difficult behaviours. The effects of mothers mental state, child behavioural status and own/other child on attributions are reported.

A longitudinal study of the language development of children between the ages of 1 and 5 years

E COURTNEY, Open University

This investigation finds a link between the conversation of children of 2 years of age with their mothers, at home, and between these same children at 5 years of age, at school, in conversation with their friends. A link is also found in the development of a conversational style between the children with their mothers, between 1 and 2 years of age. This conversational style consists of turn-taking, statements and questions which produce highly significant correlations (using Spearman's Rank Correlation Coefficient) between the mothers to their children and between children to their mothers (at age 2) and between these same children to their friends (at age 5) on all these three significant aspects of their conversation. The sample consists of 14 pairs of mothers and children for the 1- to 2-year-old data, and 10 of these same pairs for the 2- to 5-year-old data.

Temporal perception in Parkinson's disease: Effects of dopaminergic medication

R COUSINS, D O'BOYLE & J WEARDEN, University of Manchester

How is time represented in the brain? While the answer to this question is as yet far from clear, recent evidence suggests that the basal ganglia may play a significant role. Patients with Parkinson's disease (PD) have been reported to be impaired on both motor and perceptual tasks involving the explicit representation of time and it has been suggested, on the basis of pharmacological studies in non-human animals, the dopamine (DA) transmission within the basal ganglia is associated with the regulation of the speed of an 'internal clock' which has been hypothesised to underlie temporal perception. However, the evidence is not unequivocal. In this paper, we report the results of an experiment in which we attempted to examine the role of DA transmission within the human basal ganglia in auditory perception by comparing the performance, on a battery of tests, of 24 PD subjects between 'ON' and 'OFF' DA-medication conditions (one week apart) and with the performance of 24 control subjects tested on two equivalent occasions. Subjects were tested on tasks of temporal bisection, temporal generalisation, verbal estimation of duration, short-term memory for duration, and threshold for

the discrimination of both filled and unfilled interval duration and of tone frequency. In one or other task, stimulus durations ranged between 100 and 1200 ms, and none of the tasks involved a motor component other than a verbal response.

Calendrical calculation: Talent or skill?

R COWAN & N O'CONNOR, Institute of Education, London

Answering questions such as 'What day of the week was 8 January 1903?' is something that few ordinary people can do. Some consider this skill of calendrical calculation to be like other savant skills. Calendrical calculation has been found in people with limited intelligence and is more common in people with autism. However, unlike other savant skills, the scarcity of skill in calendrical calculation among ordinary people may tell us nothing about its complexity or autistic cognition. Possibly, anyone could become a calendrical calculator but few would want to. This paper compares the calendrical calculation skills of savants with that of a Professor of Mathematics. His range and accuracy are comparable to the most skilled savants and he is faster. He can also answer questions such as 'What years have March 1st on a Wednesday?' which some have claimed to be incompatible with use of an algorithm.

Does time really go more quickly as you grow older? The effects of age on the dating of public events

S E CRAWLEY & L PRING, Goldsmiths College, University of London

A common observation made by people is that the years seem to go faster as you grow older. Two experiments investigated whether, in light of this subjective time acceleration, there would be an effect of age on the dating of public events. Participants from three age groups (18-21, 35-50 and 60+) were asked to date a number of major news events. A general finding in dating experiments has been that people will, on average, tend to over-estimate the recency of events – a bias known as 'forward telescoping'. In the first experiment covering the previous seven years (1990-1996) there was the suggestion of a decrease in forward telescoping with age, while in the second covering the period from 1977-1989 this trend continued with the over 60s group now showing a tendency to date events too distantly. The experiments offer support for the popular belief that changes in time perception occur with ageing.

Attention Deficit-Hyperactivity Disorder (AD/HD)

D DALEY, M THOMPSON & E SONUGA-BARKE, University of Southampton

Attention Deficit-Hyperactivity Disorder (AD/HD) is a disabling disorder of childhood with poor prognosis. The treatment of first choice is psycho stimulant medication but many parents and professionals are uneasy about the use of medication to control children's behaviour. We evaluated two parent based psycho-social therapies for pre-school AD/HD. A Parent Training (PT) group received coaching in child management techniques. A Parent Counselling & Support (PC&S) group received non-directive support and counselling. There was also a waiting list control group (WLC). AD/HD symptoms were reduced in the PT group by a clinically significant degree. Both PT and PC&S had a beneficial but short lived effects on mothers sense of well-being. The clinical value of PT but not PC&S for AD/HD children was supported. Constructive training of parenting strategies seems a necessary condition for the success of parenting intervention.

Psychological functioning following psychosurgery in chronically depressed individuals

T DALGLIESH, Cambridge MRC Cognition and Brain Sciences Unit

Twenty individuals who had received a psychosurgical intervention for chronic, treatment-

resistant depression performed a wide range of psychological tests. Ten of the participants had recovered from depression and 10 remained depressed. The tests consisted on a standard neuropsychological battery with an emphasis on tests of executive and frontal functioning. In addition, there were a number of tests of emotion processing, social processing and the processing of future consequences. The aim of the study was to investigate whether success of the operation in terms of recovery from depression was associated with any deficits in psychological functioning in other domains. The results revealed that the non-depressed group were more impaired on measures of frontal functioning than the depressed group. In addition, all participants were impaired on measures of emotional processing. The clinical and neuroscience implications of the results are discussed.

The role of homophobic attitudes in men's blame towards male sexual assault

M DAVIES, University of Central Lancashire

Studies have shown that men blame depicted male victims of male perpetrators more for sexual assault when portrayed as gay than heterosexual. It has been concluded that homophobic attitudes might play a part in men's blame towards male victims. This paper presents two studies that investigate men's blame attributions, and homophobic attitudes, towards male victims when perpetrator gender and victim sexual orientation are varied. Study 1 reveals that men blame victims more when they are assaulted by a member of the gender they are normally attracted to. Study 2 investigates what role homophobic attitudes play in men's attributions towards male victims. It is predicted that homophobic men will blame male victims, particularly gay victims, more than men who are not homophobic. It is also predicted that homophobic attitudes will not affect attitudes towards male victims of female perpetrators. Results are discussed in relation to homophobia and male role norms.

The effects of nicotine on reward motivation and frontal cognitive functioning

L DAWKINS & J POWELL, Goldsmiths College

This study examines the influence of nicotine on processes believed to be dependent on brain dopamine. Specifically, it firstly investigates the effects of cigarette smoking and abstinence on reward motivation and frontal cognitive functioning, and secondly, whether a transdermal nicotine patch produces similar effects to smoking. Two groups of smokers and a non-smoking control are tested on two occasions. The smoking groups are tested firstly when they have been abstinent from smoking for 10 hours, and secondly either immediately after smoking (Group CIG) or after wearing a nicotine patch overnight (Group PATCH). The non-smokers are tested at the same time points. Female but not male smokers show a significant increase in reward motivation after nicotine via either patches or cigarettes. Conversely, males but not females show a significant enhancement of Verbal Fluency after nicotine consumption by either method. By contrast, non-smokers show no significant change across the two occasions on any variable.

Intergroup contact and sociospatial boundaries

J DIXON, Lancaster University

The contact hypothesis states that regular interaction between members of different groups reduces prejudice, providing it occurs under certain favourable conditions. In this paper, I discuss an implied but neglected aspect of the hypothesis, namely its interconnectedness with the spatial organisation of intergroup relations. The first section analyses the rather limited ways in which the spatiality of contact has been conceived in past

research. Offering an alternative perspective, the second section outlines a conceptual framework for exploring the relationship between contact and processes of boundary regulation (cf. Sibley, 1995). In order to develop this framework, I then review a recent case study of residential contact in South Africa, a society where boundary processes have profoundly shaped the evolution of race relations. The paper's conclusion emphasises the need to develop social psychological theory that is adequate to the spatial dimension of group processes.

Temporal bisection in children

S DROIT-VOLET & JH WEARDEN, Blaise Pascal University, Clermont-Ferrand, France & University of Manchester
Children aged 3, 5, and 8 years received training on a temporal bisection task, with standard Short and Long durations being presented as visual stimuli of durations 1 and 4 s, or 2 and 8 s. Non-standard comparison stimuli were spaced linearly between the Short and Long standards. Psychophysical functions (proportion of responses appropriate to the Long standard duration [LONG responses] plotted against stimulus duration) were computed. All showed increasing proportions of LONG responses with increasing comparison stimulus duration, but were flatter in the younger children than in the 8-year-olds. Bisection points (the stimulus duration giving rise to 50 per cent LONG responses) were close to the arithmetic mean in most conditions, although geometric mean bisection was found when the 8-year-olds were tested with the 2/8 s duration standards. Superimposition of the psychophysical functions from the 1/4 s and 2/8 s conditions, for each age-group separately, revealed approximate scalar timing at all ages. A version of a modified difference model used to fit data from adults by Wearden (1991) was applied to the data, both in its original form and with a random responding component added. According to the model, the variability of the representations of the remembered Short and Long standards decreased with increasing age, and a tendency to respond at random (i.e. without regard to stimulus duration) also decreased with age, to near zero levels in the oldest children.

Lesbian and gay affirmative therapy: An existential-phenomenological perspective

S DU PLOCK & H GOLDENBERG, Regent's College, London
A number of psychologists and psychotherapists in Britain and the USA have written about the needs of lesbian and gay-identified clients. This literature has led to both a greater awareness of the needs of these clients and also to the formulation of particular methodologies for the delivery of psychotherapy. There is currently discussion on the part of a number of existential-phenomenological practitioners about the relationship between this perspective and lesbian and gay affirmative psychotherapy. A critique of affirmative psychotherapy has also begun to take shape, arising from this debate. This critique focuses on the notions of education and consciousness-raising promoted by lesbian and gay affirmative psychotherapy and questions the meaning and function of 'affirmation' in the context of psychotherapy.

The use of transcranial magnetic stimulation in the investigation of emotional disorders

KP EBITEIER, University of Edinburgh
TMS uses the principle of electro-magnetic induction to stimulate cortical neurons with an insulated coil held over the surface of the head. Single stimuli have been used for the cortical mapping of sensory or motor areas, and interesting results, particularly in relation to functional plasticity during learning tasks have been reported. Changes in excitability, i.e. varying responses to identical stimuli, have been reported during depression and as the result of psychotropic medication. Repetitive TMS can acutely disrupt cortical function. There may also be changes in

mood in the hours to days after rTMS that may be exploited in the treatment of affective disorders.

Direct and extended contact: Testing Pettigrew's (1998) and Wright *et al.*'s (1997) models

A ELLER & D ABRAMS, University of Kent at Canterbury
This correlational study investigates Pettigrew's contact theory and Wright *et al.*'s extended contact hypothesis. Pettigrew's is a longitudinal model within which contact, qualified by five essential factors, reduces intergroup bias, mediated by changing behaviour, in-group reappraisal, affect, and knowledge of the outgroup. Three levels of categorisation (LC) are thought to operate over time, associated with a generalisation of contact effects. The extended contact theory proposes that knowledge of an in-group member's friendship with an outgroup member generates more positive outgroup attitudes. Results are generally supportive of the predictions, with contact – especially the essential variables – predicting more positive attitudes. However, despite an interpersonal LC, contact effects generalised to the outgroup. Moreover, only knowledge had a mediating effect. Extended contact contributed to the variance explained by the Pettigrew model alone, suggesting potential for decreasing intergroup bias. This study examines the postulated interrelations of variables at one time point, but longitudinal data is needed to provide a complete account of Pettigrew's model.

Pre-school experience and sociometric status

P ERWIN & J LETCHFORD, University of North London
The importance of pre-school experience in child development is now widely emphasised. However, this can take many forms. This study examines how different types of pre-school experience may be related to subsequent sociometric status in the primary school. A sociometric test was given to 187 children in a Warwickshire primary school. Those who had previously attended nursery schools or play groups scored significantly higher than those that had attended nurseries or remained at home. The results are cautiously interpreted as evidence supporting the importance of pre-school experience for childhood social development but emphasising that the nature of this experience may be crucial.

Bullying and racism among Asian school children in Britain

M ESLEA, University of Central Lancashire
Previous research on school bullying has largely neglected the issue of racism, and where it has been studied the methods used have been unconvincing. This paper describes a questionnaire survey of 243 Hindu, Indian Muslim and Pakistani children attending temples and mosques in the Preston and Bolton area, asking about their experiences of school bullying, who bullied them and in what way. Results show that bullying was widespread (57 per cent of boys and 43 per cent of girls) and that all three ethnic groups suffered equally. However, bullying was at least as likely to be by other Asian children of a different ethnic group as it was to be by white children, and was likely to relate to some religious or cultural difference such as the animal Gods worshipped by Hindus, the clothing worn by Indian Muslims or the language spoken by Pakistanis. Bullying between members of the same ethnic group was comparatively rare. It is concluded that, although it is difficult to generalise from the sample, bullying among ethnic minority children is a rich and complex problem that merits further study.

Reviewing self-report measures of personality disorder: The participants' perspective

C EVANS & C BLOUNT, Henderson Hospital, Sutton, Surrey
We use psychometrics as scientists, to choose between instruments. This paper shows that subjects appraise measures in a different way and that time, culture and language all impact on this process. Research suggests that concepts such as face-validity impact on response rates (e.g. Robson, 1993), this study asked both professionals and users (n=44) to consider and evaluate the PDQ4, BSI, MCMI, SFQ and RSE. Pattern coding was used to elicit themes emerging from the responses. Factors such as the completion time and how upsetting an individual finds a questionnaire all appear to impact on how useful and valid it is perceived to be. This study is an important partner to a more formal piloting phase of the research; enabling the elaboration of psychometric results, adding textual information which may otherwise be lost and involving subjects in a collaborative and productive way.

Typical intellectual engagement (TIE) and the stress process

E FERGUSON & S PAUDT, Nottingham University
It has been argued that when it comes to exploring individual differences in relation to the stress process then, compared to personality variables, measures of cognitive ability and intellect have been largely ignored (Payne, 1991). Stenberg and Kaufman (1998) argue that measures of typical intellectual ability such as Typical Intellectual Engagement (TIE:Ackerman and Heggestad, 1997) should be associated with adaptive responses to stress. This hypothesis was examined in a sample of 133 final year graduates who were actively seeking employment. From an analysis of both zero-order correlations and a series of LISREL structural equation models the results indicated the TIE was related to positive appraisals and adaptive coping functions as well as the generation of ideas for careers. The results also indicated that this relationship between TIE and ideas was mediated by stress appraisals.

The culture of blame: Self-criticism and stress in doctors

J FIRTH-COZENS, University of Northumbria at Newcastle
This longitudinal study considers the effects of high and low self-criticism in doctors, measured as students, upon their stress levels and their patient care. It shows that those with high self-criticism are, ten years later, more stressed and more worried about making mistakes and decisions. As pre-registration house officers they were more likely to report making mistakes but this may be due to their personality rather than actuality, and has for monitoring poor care. The data also show that those with low self-criticism are having more difficult relationships with patients. These data are illustrated by the longitudinal data on psychiatrists. The paper is discussed in terms of the present health culture of accountability, as well as the psychological interventions that may reverse these cognitive extremes earlier in training and so affect the quality of patient care.

Evidence for conjunctive and disjunctive probability judgement in children between 5 and 10 years of age

J FISK, Leeds Metropolitan University
The developmental course of probabilistic reasoning has received much attention since Piaget's pioneering research in the 1940s and 1950s. However, to date much of the research has focused on relatively formal but simple tasks involving the judgement of relative frequencies. The present study attempts to evaluate children's competence in more complex probabilistic tasks involving conjunctive and disjunctive judgements. The task, which was designed to make 'human

sense' to the participants, involved a competition between two teams to predict which team was first to draw a (lego) brick(s) of a given colour from a sample space containing different proportions of red and blue bricks. Children aged between 6 and 10 years of age were tested. The results revealed a tentative relationship between performance in a Piagetian class inclusion task and successful disjunctive and conjunctive probability judgement.

Measurement and semantic issues in the investigation of hypnotic suggestibility

F FRASQUILHO, University College London

This presentation introduces some of the psychometric and semantic issues surrounding the definition and measurement of hypnotizability. While the development of the first hypnotizability scales was heralded as a significant advancement in the search for the principle underlying features of hypnosis, the past few years have seen increasing concern over what such scales actually measure. The utility of traditional statistical techniques based on factor analysis in exploring such issues has also been questioned given potential item difficulty confounds. However, biserial correlations between hypnosis scale items and variables of research interest can help identify potential trends indicative of process putatively underlying different features of hypnotizability. This correlational technique is used to examine dissociation and absorption models of hypnosis and hypnotizability, two factors putatively underlying features of hypnotic responding.

Stress and coping with uncertainty: The construction and validation of a new scale

V GRECO & D ROGER, University of York

The literature on tolerance of ambiguity has focused on problem solving and decision making (Furnham, 1994). From the perspective of assessing the moderating role of personality in stress and health, emotional uncertainty is theoretically a more important construct, but empirical research in this area has been hampered by the lack of appropriate psychometric instruments. This paper presents the construction and validation of the Coping with Uncertainty Scale (CUS), assessing three factors of emotional uncertainty, desire for change and cognitive uncertainty. An experimental study shows that subjects with high emotional uncertainty scores have significantly higher fluctuations in both heart-rate and blood pressure than low scoring subjects during an experimental stress manipulation, and current research with the instrument focuses on the interactive effects of emotional uncertainty and scores on a newly-constructed scale for assessing need for control.

Gender stereotypes in music and children's social judgements

AC HARRISON & SA O'NEILL, Keele University

This study investigated how children use different types of gender-related information about musical instruments to gain more detailed understanding of children's gender-typed knowledge. One-hundred-and-ninety-two children (aged 8-9 years) were presented with descriptions of girls and boys who played either gender-consistent or gender-inconsistent musical instruments. Participants rated how much they would like each child and predicted how much each child would want to play five gender-typed instruments. Participants also predicted how much two sex-unspecified children who played gender-typed instruments (flute or drums) would like the five instruments. Both boys and girls showed more liking for same-sex children who played gender-consistent instruments than those who played gender-inconsistent instruments. Children used sex of target and instrument played information when predicting male and female targets' liking for gender-inconsistent instruments and female targets' liking for gender-consistent

instruments. Children used only sex of target information when predicting male targets' liking for gender-consistent instruments. Results are discussed in terms of social-cognitive models of the structure of children's gender-typed knowledge.

How far are the BPS Guidelines for the assessment of PhD's being observed?

J HARTLEY & S JORY, University of Keele

Little has been published on the experiences of UK postgraduate students in their vivas for their PhDs apart from a few, mainly negative, anecdotal reports. The main aim of this study was to collect more detailed and more representative data on these issues. A questionnaire was completed anonymously by 60 female and 40 male psychology full-time and part-time postgraduates who had experienced a viva between January 1997 and January 1999. The respondents were almost equally divided between those who found the viva a positive experience (44 per cent), and those who found it a negative one (39 per cent), despite the fact that 85 per cent of them had been successful in their vivas. There were some major differences between the actual procedures and the practices that are recommended by the BPS, and these differences and their implications are the focus of this paper.

Still white-coated – but less weird and definitely wealthy: Adolescents' image of scientists

H HASTE, K RICE & J ZACHARIOU, University of Bath

In the light of concern about public ignorance of science, this study explores images of science and scientists amongst adolescents. The generic scientist is still a white-coated, lab-based male, but the 'dangerous crank' is less evident than in previous studies. Personalising the image through cues about becoming, or marrying a scientist yields more subtle pictures. The positive aspects are that scientific work is rewarding and challenging, and one can 'make a difference'. Extrinsic rewards include prestige and – surprisingly – wealth. A scientist spouse would be intelligent, informative – and be useful round the house. The negative aspects are that scientists are boring and 'geeky': a scientist works under pressure, has a lot of responsibility, and may have years of frustration before achieving results. The scientist spouse may be preoccupied with work, and intimidatingly intelligent. In 'the world in 2030', optimistically, quality of life will improve, cures for diseases will be found, and environmental and social problems solved through new knowledge. Pessimistically, new technology may make wars more dangerous, and increase environmental problems – along with over-population. In summary, there are environmental concerns, rather than a fear of science getting 'out of control'. A 'scientist' is dedicated, hard-working, carefully experimenting on real life issues. Some 'anti-science' discourse about 'interfering with Nature' is balanced by optimism about technological solutions to environmental problems. The image of adolescents' 'irrational ignorance' seems unfounded.

Exploring the relationship between savant musical talent and the musical splinter skills associated with the autistic syndrome

P HEATON, University of Greenwich

Traditionally musical savants have been described as individuals who demonstrate outstanding musical talents that co-exist with intellectual handicap. However, recent evidence suggests that many savants do not show severe cognitive deficits and for some, intelligence is within the normal range. Although musical savants frequently suffer from visual impairment, this is not invariably the case and there are many reports of sighted musical savants. Autism is commonly associated with the savant syndrome and children with autism have been shown to

demonstrate outstanding splinter skills within the musical domain. Data from experimental investigations into these splinter skills are presented and evaluated in the light of current knowledge about the cognitive, motivational and affective aspects of savant musical talent.

Strategy and rule use by a savant numerical calculator

L HEAVEY & J ELANDER, London Guildhall University

In the present study, the outstanding arithmetical skills of HP, a 33-year-old male with autism, were investigated with the aim of elucidating the cognitive processes which underlie his mental calculation feats. The series of experiments revealed HP to show a conceptual understanding of basic arithmetical principles, flexibility in his approach to arithmetical problem-solving in an unstructured context, selective use of a rounding-up strategy in multi-digit multiplication and the application of an algorithmic method in identifying prime numbers. Such findings challenge the widely held view of savant arithmetical skills as routinized and inflexible.

Effects of trauma on memory

S HENDERSON, University of Aberdeen

This paper reports the results of three experiments examining the negative effects of a traumatic event on memory. Trauma was induced by misleading participants to believe that they had broken an expensive piece of equipment. The results showed that when participants were explicitly informed that their memory for a passage of text would be assessed their performance was comparable to that of a control group (Study 1). When participants' incidental memory for text was assessed, however their performance was significantly poorer than that of the control group (Study 2). The results of Study 3 show that susceptibility to poor incidental memory following a traumatic event may be sensitive to individual differences as measured by Broadbent et al's Cognitive Questionnaire (n=108).

Studying masculinities and the body: A case of transgressing gender?

K HENWOOD, University of East Anglia

One reason for feminist psychologists to study men's thoughts, experiences and feelings about their bodies is to challenge the cultural binary that constructs men as rational agents who transcend the body and reduce women to 'the natural', ruled by emotions, relationships, and a preoccupation with the appearance of their bodies. This paper reports research in which over 100 men were interviewed about their thoughts and experiences as embodied men in contemporary life and culture. Analysis of transcripts generated lines of inquiry that challenge assumptions about 'disembodied' men. Reactions to images of the exemplary male body suggest that many men struggle with the aesthetic scaling of bodies. Some men find refuge in their bodies from social anxieties and threats of psychological harm, e.g. by taking exercise or through intimate relationships. The paper concludes by commenting upon the complex psychological and interpretative issues associated with claims about 'transgressing gender'.

Exploring psychological change in a clinical sample

J KATZ, St Andrews Hospital, Northampton & A GUPPY, Middlesex University

Following models emphasising social and cognitive approaches to mental health problems, the paper describes the impact of a cognitive behavioural intervention. Twenty-six residential clients completed questionnaires before and after receiving a series of CBT related inputs over the course of their 6-8 week programme. The questionnaires included several measures of state and trait mental health (e.g. GHQ, BDI, STAI) and measures reflecting the stress appraisal and coping process. These measures included dispositional coping, locus of control, dysfunctional attitudes and irrational beliefs. The

findings indicated significant reductions in mental health symptomatology and some limited indicators of positive change in relation to process variables. It is concluded that such variables may be a useful focus for future intervention studies and may be important in relapse prevention.

Sluggish visual processing of dyslexia

A KEEN, Central Queensland University, Australia

A defect affecting the transient visual sub-system is believed to be one of the prime factors affecting reading disability. Visual processing of dyslexics is examined in this study. Participants are three groups of dyslexic, chronologically age-matched, and reading age-matched children. The results reveal that although dyslexic individuals do not show any deficit in processing (a) wholes and parts (Experiment 1), (b) information in peripheral locations of the retina (Experiment 2), and (c) various sizes of the stimulus (Experiment 3); they show a deficit in temporal processing of visual information. These findings challenge the transient deficit hypothesis in a sense that the transient sub-system has been suggested to be associated with processing of the global level, low spatial frequencies, and peripheral vision; however, they confirm that hypothesis in a sense that this visual sub-system is suggested to be associated with processing of high temporal frequencies.

Why does the tendency to call recognition test items old, increase when they are revealed before the recognition judgement?

A KEEN, Central Queensland University, Australia

The so-called Revelation Effect is a positive recognition bias found when in a recognition task, participants are required to somehow reveal or uncover test items before making recognition judgements. Previous researchers have failed to explain the origin of this effect. In the present investigation, a series of six experiments were conducted to explore the determinants of the revelation effect. Results showed that memory strength and response criterion are the prime determinants of the revelation effect. The response criterion is not dependent on any kind of similarity, perceptual or conceptual, between items revealed in a task and subsequent test items. The results of this study showed that the revelation effect is a continuous effect, which is spread beyond the first test item after a revelation task. To elicit RE, a task must require some level of mental engagement. However, if a task is too complex it may dilute the effect.

Assessment of mental health in people with intellectual disabilities: Use of the Symptom Checklist-90-R

SC KELLETT, N BEAIL, DW NEWMAN & E MOSLEY, Barnsley Community and Priority Services NHS Trust

The development, usage and clinical utility of psychometric tests for the assessment of mental health problems experienced by people with intellectual disabilities has only recently become a clinical issue and subject of methodological debate. In general there is a paucity of measures, little consideration for validity/reliability issues and therefore few group norms. In this paper we describe the application of the Symptom Checklist (SCL-90-R) with people with intellectual disabilities. Results suggest that the measure has high reliability and validity with this population and that the SCL-90-R effectively indexes mental health concerns. The data is discussed in terms of the potential for the SCL-90-R to be used as an outcome measure for intellectually disabled people with mental health problems regardless of the mode of intervention.

Psychology in the new Millennium: How psychology mark-up language transforms psychology and overcomes normal space and time constraints

K KINGSLAND, Cheriton, Hampshire

The World Wide Web is moving into a new era through the adoption of extensible mark-up language (XML). All major ICT players are committed to the standard, and the effects are profound. Whilst XML is generally replacing HTML the effects of the change are non-linear and the way we think, learn, communicate, manage, do business, access professional services, and conduct our lives is set to change utterly and irreversibly. We are probably witnessing the most fundamental and powerful transformation of human life since we learned to speak. But this transformation is upon us now, and will affect everyone in an unprecedented timescale: perhaps five years. Psychology's part in all this is up for grabs. This paper lays out the socio-technical context for the development of a Psychological Mark-up Language (PsyML) and illustrates its use in several contexts: research, data processing, knowledge management, communication, education, professional services. PsyML will transform psychology overcoming normal space and time constraints.

The effects of stress on examination question comprehension and performance

D KIWAN & A POLLITT, UCLES

This study investigates the effects of time-induced stress on the process of candidates reading questions in a written examination, and the resulting effects on their performance on these questions. We hypothesise that, in questions with different features of language or presentation, this time-induced stress may have varying effects on candidates' comprehension. Subjects include 300 Year 10 candidates, divided into three groups, balanced by sex and ability, who are presented with text on a screen at three different speeds. Subjects in each group are then required to either recall as much as possible of the text or to complete a summarisation exercise which focuses on the particular linguistic features under investigation (negative quantifiers, cohesive devices, epistemic modals, anaphora). Analyses of variance are carried out to analyse the effects of sex, ability and type of feature presented.

The Lawrence Self-esteem Questionnaire (LAWSEQ): An exploration of its psychometric properties with a cross-cultural sample

CM KOKKINOS, Cyprus Pedagogical Institute

This paper reports the results of a cross-cultural study on the psychometric properties of the Lawrence Self-esteem Questionnaire (LAWSEQ), a self-esteem measure developed in the UK and standardised to both British and Australian populations. The present study addresses the issue of the scale's construct validity, since it is intended to measure a single concept – namely overall self-esteem; explores its internal reliability, and finally tests its correlational adequacy with other variables such as academic achievement, and socio-economic status (SES). Four-hundred-and-ninety-eight Greek primary school aged pupils, attending the upper three levels of the sixth grade primary Greek school participated in the study. The results question the unidimensionality of the scale since factor analysis revealed three underlying concepts measured with the LAWSEQ. The internal consistency of the scale was found to be moderate, and finally self-esteem was significantly positively but lowly correlated with academic achievement and SES. Results fail to provide sound evidence for the scale's psychometric adequacy and suggest caution in interpreting the total score. Finally, they address the possibility for further development of the scale as a multidimensional instrument.

Promoting the traditional classroom: A recipe for exclusion and low attainment

P KUTNICK, University of Brighton

This talk approaches exclusion by questioning whether inclusion can take place in current primary school classrooms, which are under pressure to expand a 'traditional' approach to pedagogy. The talk considers what is meant by traditional primary school practices and origins of the call for traditional approaches; draws upon a working example of traditional primary school practice in the Caribbean island of Trinidad, showing how particular children are excluded from classroom activity; and concludes by citing results for a large-scale study of classroom practice in English primary schools, showing that teachers rarely draw upon inclusive teaching and learning strategies within their pedagogic practice. The talk opens discussion concerning the relationship of pedagogic practice and inclusion.

A study into Chinese university students' academic causal attributions

PY LAI, Hong Kong Institute of Education

This paper reports a study of Hong Kong Chinese university students' academic causal attributions. The participants are 549 full-time first year undergraduate students in Hong Kong. Their causal dimensions are measured by McAuley's (1992) Revised Casual Dimensions Scale over two occasions with an interval of one academic year. The scale comprises four causal dimensions: locus of causality, personal control, stability and external control. Confirmatory factor analysis using LISREL 8 is conducted to test the construct validity of the scale. Repeated measures ANOVA is carried out to analyse the change over time. The results show that in general students become less internal in their locus of causality and weaker in their belief in personal control as they progress through their first year of undergraduate study. The implications for teaching at university level are then discussed.

An exploration of metacognition in 5- and 6-year-olds

S LARKIN, King's College, London

This paper takes the view that second-order thinking or metacognition is important for the development of critical thinking and self-reliant learning. It describes both preliminary findings and methodological problems encountered in a project designed to follow the development of metacognitive abilities in 5- and 6-year-olds. It hypothesises that metacognition is not solely age developed, but that social environment; pedagogical practice; the nature of the cognitive problem posed and the individual's affective state at a given time impact upon the development of metacognition in the individual child. The paper also seeks to give some pointers towards good practice in facilitating metacognition in this age group.

Experience seeking personality and sensitivity to motivationally-relevant stimuli

J LESSITER & J POWELL, Goldsmiths College, University of London

The present study investigated the variable impact of personality upon attention toward motivationally relevant stimuli. It aimed to examine whether people who score highly on Experience Seeking, a personality trait putatively related to reward motivational processes and dopamine activity, are more distracted by verbal stimuli with (i) just a pleasurable connotation (as predicted by the Reward Cue Sensitivity Model), or (ii) any form of motivational relevance (i.e., both pleasure- and threat-related words: Motivation Cue Sensitivity Model). These issues are addressed with the use of a Stroop paradigm. Ninety healthy volunteers named the ink colours of neutral, pleasure- and threat-related words. Experience Seeking was associated with increased distraction by

motivationally relevant material (i.e. pleasure and threat) compared to neutral material, supporting the Motivation Cue Sensitivity Model.

Times and analysis in social psychology

M LEVINE, Lancaster University

While there is a growing understanding of the richness and complexity of time in social psychology, when it comes to research practice one kind of time tends to dominate. The temporal tends to appear in its linear and unidimensional form (before and after designs; reaction times etc). This paper examines the consequences of using different kinds of times to explore a single research topic. It explores a key instance of intergroup conflict (the Falklands/Malvinas conflict of 1982) through the lens of different temporal frames. Taking times as diverse as 'seasonal time', 'political time' and 'diplomatic time', the paper explores the relationship between the temporal and the macro-social context. The paper also examines more micro-social times. By looking at transcripts of political speeches which refer to the conflict, it considers what a focus on time and language can also contribute to work on intergroup relations.

Organisation, time and the role of the manager

S LEWIS, University of East London/Jemstone Consultancy

This paper considers some of the different metaphors of time used in organisations. The metaphors considered are: time as a resource, time as a path through the future, time as symbolic and time as a flow of experience. Each of these metaphors are examined for what they suggest the task or role of the manager to be. The point is made that all these conceptualisations are only metaphors since time itself is a psychological construct. Each is examined for its strengths and weaknesses in terms of assisting with our understanding of management, organisation and organisational life. The argument is made that the effective manager needs to have an understanding of, and be able to utilise, these different ways of thinking about time in organisations. It is further argued that this is particularly relevant at present given the shift in Britain from manufacturing to knowledge based organisations.

Differences in brain activation as a function of timing: Evidence of a temporal accumulator?

F MACAR & F VIDAL, Centre de Recherche en Neurosciences Cognitives, CNRS, Marseille, France

Prominent models of the internal timer in the second-to-minute range involve cumulative processes. Temporal judgements are assumed to depend on the number of 'pulses' or 'time units' that are accumulated from the beginning to the end of the target interval. This number, and hence, the temporal judgement can be modulated by activation and attention factors. The present series of experiments was designed to find some neural evidence of this mechanism. We recorded slow potential changes over the scalp in subjects performing a time production task. The surface Laplacian was used as an index of localized brain activation. The subjects tried to produce a 25 s interval between two brief button presses as accurately as possible. One of three diodes was lit after each trial to provide feedback. When the intervals produced were sorted into 'short', 'accurate' (2.4 to 2.6 s) and 'long', the level of activation over the mesial prefrontal cortex was found to be higher in the 'long' than 'short' category. An intermediate level corresponded to the 'accurate' intervals. Similar data were obtained with the same task in the absence of feedback, and with another task that involved temporal discrimination instead of temporal production. These data are consistent with the idea of a cumulative mechanism modulated by differences in the subject's level of attention between trials. The mesial prefrontal

cortex mainly includes the supplementary motor area, the timing functions of which are suggested by brain imagery and neuropsychological studies.

Context as a defining factor in lesbian and gay affirmative systemic therapy

M MALLEY, Alcohol East, London

The central tenets of systemic therapy have included an emphasis on the importance of context – societal context, cultural context, peer and familial context. 'Second order' systemic thinking has extended the emphasis to include the importance of the context of the therapist and the therapeutic engagement. Within this thinking, however, the idea of lesbian and gay sexualities as a defining context has tended to be overlooked. In a therapeutic modality which works primarily with 'systems' and relationship, this is a glaring omission which has implications for the development of lesbian and gay affirmative approaches and the ability of systemic therapists to work with lesbian and gay individuals and relationship groups. This paper considers why the context of systemic ideas and practice may have mediated against the development of these skills and how this may be addressed in the formulation of more affirmative systemic approaches.

Mental undoing and the hedonics of gain and loss

DR MANDEL, University of Hertfordshire

Four studies tested the hypothesis that perceptions of positive or negative 'undoing' can influence anticipatory hedonic assessments of outcome sequences comprising gain and loss. Studies 1 and 2 showed that gain-loss sequences involving hypothetical monetary outcomes would be assessed less positively than loss-gain sequences consisting of exactly the same events. Studies 3 and 4 extended these findings to include evaluations of preference and attributions of luck and blame, to rule out an alternative 'recency' explanation, and to include sequences involving non-monetary, achievement-related events. Implications for prospect theory, and the more general hedonic implications of counterfactual ('if only') and quasifactual ('as if') reasoning are discussed.

Considering the consequences in practical inference

KI MANKTELOW & N FAIRLEY, University of Wolverhampton, D E OVER University of Sunderland

We report an extension to a line of work in which we have begun to explore the role of superordinate principles in practical reasoning. In previous studies, we have looked at two core domains of this area of thought: causal and deontic reasoning, by asking people to make judgements about conditional sentences, e.g. 'If you pass your exams, then you will get a good job' (causal) or 'If you tidy your bedroom, then you may go out to play for an hour' (deontic). Such studies have shown that when an item which is not the stated antecedent (p) item, but which satisfies a presumed superordinate principle of which p is an exemplar, is presented, conditional inferences are endorsed as if p had been stated. In this paper, we extend this approach by considering different categories of consequence of the endorsement of a conditional inference: purely epistemic versus materially important.

Levels of inclusion: Time in, time out

P MARAS, University of Greenwich & G EVANS, North Somerset Educational Psychology Service

This paper introduces a symposium on inclusion. The inclusion of all children within mainstream schools has been a topic of debate for two decades. The degree of inclusion has ranged from social to full social and academic and has often been idiosyncratic to particular LEAs and schools, reflecting and being reflected by political trends.

Research, has tended to focus on children's physical presence (or not) in school and to disregard children who, through present, may not be psychologically engaged in learning.

Theoretical positions have at times been based on ideology, rather simplistic and focused on single categorical distinctions such as ethnicity or gender rather than considering intersections between and the multi-dimensional nature (and consequences) of such dimensions. Perhaps more importantly, considering governments current concern with pedagogy, little research has been systematically linked to both theory and classroom practice.

Time estimation across the lifespan

T McCORMACK, GDA BROWN & EA MAYLOR, University of Warwick, Coventry

This paper describes our recent studies of the development of timing. In the first study, time estimation in children and elderly adults was assessed using two time estimation tasks: a temporal generalization and a temporal bisection task. Developmental differences in overall levels of performance were evident at both ends of the lifespan, and were more marked on the generalization task than the bisection task. Older adults and children performed at lower levels than young adults, but there were also qualitative differences in the patterns of errors made by the older adults and the children. The findings can be accounted for by assuming developmental changes across the lifespan in the level of noise in temporal encoding and, in addition, developmental changes across childhood in the extent to which LTM representations of time intervals become distorted. Young children's LTM representations of time appear to be distorted such that durations are remembered as shorter than the durations actually presented. To examine this further, a second study explored the extent to which children's memory representations of time intervals decay with delay, using the subjective shortening technique developed by Wearden and Ferrara (1993). This technique examines the shortening of representations of durations as a function of how long they are maintained in working memory. Although children aged 7-9 years showed the subjective shortening effect, there was no evidence of greater shortening in children than in adults. It is possible that shortening in LTM and shortening in working memory are a result of different kinds of processes which have different developmental profiles. The results of a third study examining this issue are reported.

Cognitive behaviour therapy with lesbians and gay men

S MCGILL, Mortimer Market Centre, London

This paper examines the theory underlying the application of cognitive behaviour therapy to lesbians and gay men who present at psychological services. It is proposed that this approach readily lends itself to helping to resolve problems specific to this population. Factors that need to be considered when designing an intervention are outlined. Sexual identity and 'coming out' difficulties are used as an example. The importance of cultural contexts – in terms of the influence of both societal prejudice and gay community norms – is assessed and linked to biased negative beliefs in lesbian and gay clients. A cognitive model of lesbian and gay identity is suggested as a basis for intervention strategies.

Adjustment of adult children of alcoholics: The role of negative childhood experience and maternal alcoholism

F MCGUIRE, Liverpool John Moores University & A GUPPY, Middlesex University

The study examined negative childhood experiences (NCE) and adjustment measures within a sample of 67 adults reporting to be children of alcoholic parents (ACOA) and 70 adults with non-alcoholic parents (non-ACOA). Measures of adjustment included coping, affect, mastery and fear of negative evaluation. It was

found that NCE scores were significantly correlated with all the measures of adjustment. ACOAs showed significantly more negative childhood experiences, lower perceived mastery, affect and active coping and greater fear of negative evaluation. Further analyses examined whether gender of alcoholic parent, respondent gender or the interaction affected NCE or adjustment scores. It was found that those whose mother had been the alcoholic parent showed significantly more negative childhood experiences, lower mastery and greater fear of negative evaluation. Conclusions are made with respect to the development of research and practice within this field.

Crime awareness, fear of crime, and psychosocial functioning in older people

KJ MCKEE & C MILNER, Univ. of Sheffield
Research suggests that fear of crime in older people limits social activity and engagement. A Convenience sample of 60 older people, recruited via day centres, was given structured interviews assessing health status (Health Status Index) and mental health status, (Mental Health Inventory-5), awareness of crime, fear of crime (catastrophizing interview technique) and psychosocial limitation (Functional Limitation Profile). Results indicate that a person's physical health moderate a relationship between crime awareness and fear of crime. While perceived neighbourhood safety is associated with psychosocial functioning at the bivariate level ($r=.30, p<.05$), in a multivariate model fear of crime is not associated with psychosocial limitation, which is predicted by physical and mental health status ($R^2=.51, p<.001$). These results are related to models of fear of crime, and implications of the findings for health psychology and social policy are explored.

Does motivational profile predict level of engagement with CASE?

R McLELLAN, King's College London
This research is examining the suggestion that motivational orientation can explain the differential cognitive gains made by students participating in CASE. The study is longitudinal following a sample from the 1997 cohort through the programme and employs a quasi-experimental design, involving all Year 7 students in 5 CASE ($n=888$) and four non-CASE ($n=703$) schools. Drawing on a goal theory perspective an instrument has been designed to capture the motivational variables of motivational orientation, beliefs and self-view. Cognitive level is assessed via a Science Reasoning Task. Pre-test data derived from these instruments is presented. Qualitative data, in the form of observations and interviews, has also been collected. Analysis of the pre-test data indicates that students in CASE schools and girls have more adaptive motivational profiles. The qualitative data indicates that classroom environment is also a major contributor to goal adoption and could therefore influence the effectiveness of the CASE programme.

Northern Ireland: A time to forgive F McLERNON & E CAIRNS, University of Ulster

Recently the concept of forgiveness has been broadened to encompass group injury, and the use of forgiveness to eliminate group aggression has been advocated in inter-group conflicts such as that in Northern Ireland. The present study therefore sets out to attempt for the first time the measurement of intergroup forgiveness, and to identify which social factors are linked with the propensity to forgive the outgroup in Northern Ireland. Seventy-four Catholic and 52 Protestant adults completed a shortened inter-group version of the Enright Forgiveness Inventory (Enright, 1992). Few participants expressed complete forgiveness, and hiloglinear analyses revealed that more serious hurt carried less prospect of forgiveness. Catholic females from the lower socio-economic groups, and Protestant males from all socio-economic groups except the highest were the most unforgiving.

Post-traumatic Stress Disorder among nursing staff following the Omagh bomb

S MIDGLEY & J FIRTH-COZENS, University of Northumbria at Newcastle & C BURGESS, Sperrin Lakeland Health and Social Care Trust

This paper looks at the levels of stress and PTSD in nursing staff based at the Trust serving the town of Omagh after the bomb explosion last year. It shows that stress and PTSD levels are particularly high (39 per cent and 38 per cent respectively) for those involved in some way, and work fatigue and perceived ineffectiveness are considerably greater for them since the bomb. Unqualified nurses had the highest PTSD levels. The experiences that are most likely to result in PTSD are: involvement closer to the explosion; previous experience of trauma; and previous emotional distress. These results are discussed in terms of the process of PTSD and of implications for the Trust.

Coincidence-detection models of interval timing: Evidence from fMRI studies of cortico-striatal circuits

WH MECK, Duke University, North Carolina, USA

The ability of the human brain to process event durations in the sec-to-min range is a fascinating problem given that the basic electrophysiological properties of neurons operate on a msec time scale. We now present evidence from brain imaging studies using functional magnetic resonance (fMRI) to support a coincidence-detection model that integrates a multitude of cortical and thalamic oscillations with a 'perceptron' processing system in the basal ganglia in order to arrive at the calculation of time intervals much larger than the oscillation periods.

Get SET (Scalar Expectancy Theory) for a new millennium

WH MECK, Duke University, North Carolina, USA

Scalar Expectancy Theory (SET) is based on the scalar property of interval timing which proposes that the constant coefficient of variation observed in timing behaviour reflects an underlying random variation in a multiplicative noise variable. Because uncertainty (noise) is proportional to the interval being estimated, response distributions for different intervals superimpose in relative time. Complementing the scalar variability of interval timing is the use of ratios rather than differences in comparing remembered and currently elapsing intervals as well as the linear scale for subjective time. Taken together, these three properties are critical features of the information-processing model that has been developed from SET to direct future behavioural and biological investigations of timing and time perception.

Lesbian and gay affirmative psychotherapy: Defining the domain

M MILTON & A COYLE, Surrey University

There now exists a substantial literature on psychotherapy with lesbians and gay men from an affirmative perspective, i.e. based on the belief that lesbian and gay sexualities are of equal value to heterosexuality. However, there is a lack of consensus concerning what constitutes lesbian and gay affirmative psychotherapy. This paper explores this issue by examining commonalities in the literature and by presenting findings from a qualitative study which explored what is meant by affirmative psychotherapy by conducting interviews with 14 affirmative psychotherapists and 18 clients who had received affirmative psychotherapy. Key themes from this study related to the role of the psychotherapist's personal qualities in affirmative psychotherapy, the role of knowledge about lesbian and gay sexualities, the role of the psychotherapist's theoretical orientation and counter transference processes. Participants did not conceptualise affirmative psychotherapy as a discrete therapeutic approach but rather as a

stance which can be incorporated within existing approaches.

Are bullies in infant classes socially skilled?

C MONKS & PK SMITH, Goldsmiths College, University of London &

J SWETTENHAM, University College London

This paper examines the nature of bullying in infant school between the ages of 4 and 6 years. A sample of 104 children from four London Primary Schools are assigned to the role of bully, victim, defender, bystander on the basis of peer nominations. Children are assessed on a battery of theory of mind tasks, including the unexpected transfer task, the deceptive box task and a second order false belief task. Additionally, children are assessed on a non-verbal stroop task (day/night task) which assesses their inhibitory control skills. The roles taken by the children in bullying are examined in relation to their performance on these tasks. These findings are discussed in relation to the nature of bullying at this young age.

Time and the understanding of phenomena: Components and development of the diachronic approach

J MONTANGERO, University of Geneva

The diachronic approach in sciences, which consists in inserting a phenomenon within the time dimension instead of considering it only as it is here and now, has proved fruitful. Our studies on the development of that approach in 7- to 12-year-old children aimed at defining the bases of that ability at the level of everyday thinking. Several experiments investigated how these children imagined the past stages or future evolution of a biological, physical or psychological phenomenon. Different components of the diachronic approach and ways of relating successive states have thus been evidenced. First we must distinguish the diachronic tendency, or propensity to evoke the past and the future when considering a current situation, and diachronic thinking or reasoning, i.e. the way to imagine transformations over time. The latter is composed of more or less evolved forms of: principles of transformation (e.g. size is supposed to increase with time or size and complexity are thought to increase); temporal organisation (e.g. connected changes are thought to covary or subjects spontaneously imagine different though interconnected successions, like the course of a cause and of its delayed effect); connections between successive states (e.g. a situation is explained by its current context or it is partly explained by a previous event; a series of successive states is described in a juxtaposed way or as one single phenomenon). These components of the diachronic approach develop significantly between 8 and 12 years of age, but are they always fully developed in adult explanations?

Savant-syndrome and enhanced low-level processing in individuals with autism

L MOTTRON, University of Montreal

Special abilities in the context of autistic disorder are well documented, but have not been explicated adequately. Proposed accounts of overtraining, giftedness, eidetic and deficits in the structuring of information fail to account for several aspects of savant capabilities. We present a novel cognitive developmental model for savant syndrome in individuals with autism. This model is based on a paradoxical functional facilitation of low-level perceptual processing systems that compensates for impairment in high-level, complex operations. Empirical evidence is presented from experiments in which musical and visual hierarchical stimuli were utilised with a musical savant, a savant draughtsperson with autism, and groups of non-savant individuals with autism, with and without musical and drawing expertise.

Predicting mortality in the elderly from health psychosocial and cognitive factors – Southampton Ageing Project

M MULLEE, R BRIGGS, PG COLEMAN, J STEVENSON & J TURNBULL, University of Southampton

Survival analysis is used to model mortality of 349 elderly cases (aged 64 to 96), living in the Southampton area of the UK. Survival time is calculated as the time from entry into the study in 1977-78 to date of death or last known date alive, up to December 1998. Health, psychosocial and cognitive data were collected at entry to the study and at two further time-points; 1978-79 and 1979-80. The initial phase of the analysis is focused on predicting mortality from variables collected at entry to the study. Having adjusted for age, sex and markers of physical health (threats and risks), measures of cognitive function, activities of daily living and intrapsychic scores are significant predictors of mortality. Further survival analysis will take account of the longitudinal nature of the study by summarising the data collected at the three time-points.

Assessment of fatigue in ME sufferers and non-sufferers

V NEWHAM, VH GREGG & D JONES, Birkbeck College, London

Ways in which sufferers of myalgic encephalomyelitis (ME) and non-sufferers conceptualise and experience fatigue was investigated firstly by using semi-structured interviews. Responses were analysed using procedures based on grounded theory and the emerging concepts used to construct a 50-item questionnaire which was completed by other sufferers and non-sufferers. The outcome of factor analysis is discussed in relation to earlier findings and the result of discriminant analysis is taken interpreted as indicating that items dealing with the limitations and consequences of fatigue, rather than symptom frequency or intensity are sufficient to discriminate sufferers from non-sufferers.

Mapping and SEN pedagogy

B NORWICH, University of Exeter & A LEWIS, University of Warwick

This paper summarises the outcomes of a recent review of literature which addresses the question of whether there is a pedagogy that is distinct for pupils with special educational needs (SEN). The review has been conducted in three stages as part of the BERA national event initiative. It has included a briefing paper which set out a conceptual framework which was the basis for a national seminar on the issue. Following this a systematic literature search was conducted which focused on the SEN areas of specific, moderate and severe/profound learning difficulties in the learning areas of literacy, numeracy and motivational/attitudes. We summarise the main outcomes of this review in terms of a conceptual framework and empirically based conclusions.

Hypnosis, suggestion and hysteria: A structural model

D OAKLEY, University College London

There are many similarities between the symptoms of conversion hysteria and phenomena produced in hypnotic contexts. This paper reviews some of those similarities and considers more general features associated with both hypnotic phenomena and conversion hysteria symptoms. A recurrent theme is the apparent paradox which exists between the subjective reality and involuntariness of the phenomena in both hypnosis and conversion hysteria and the fact that objectively they appear to be role-congruent enactments responsive to sociocognitive influences. A model of consciousness and self-awareness is presented which attempts to resolve that paradox whilst describing similar mechanisms underlying hypnotic phenomena and conversion hysteria symptoms. The model develops the idea of a

central executive structure acting outside self-awareness but a late stage of information processing which can be directly influenced from both internal and external sources to produce the relevant phenomena. Implications for treatment of conversion disorders are briefly considered.

Cognitive process and intuition in selection

TC OLIVEIRA, Birkbeck College, London

Cognition is complex. It ranges from inference to intuition. In normative selection, while inference is considered rational and scientific, intuition is not. Yet intuition may represent a deeper and wider-ranging rationality than inference, with an unconscious logic which is central to resolving a range of complex or contradictory criteria in selection decision-making. This paper suggests that there is a conceptual basis for this within the framework of cognitive psychology and the philosophy of perception, and an empirical basis in recent neural research. In which case, rather than being unscientific, sub-rational, or irrational, intuition may be the necessary pre-conscious condition for assessment and ordering of complexity in both personnel selection and daily life.

Memory and reaction time during self-focused attention and evaluation anxiety

G PANAYIOTOU, Intercollege, Cyprus

During this experiment, 99 participants complete a lexical decision task under conditions of self-focused attention or no self-focused attention and either evaluation anxiety or no evaluation anxiety. The stimuli consist of words and nonwords. The words are either trait adjectives or neutral adjectives, which the participants rate for their self-descriptiveness. Participants press buttons to indicate if a stimulus is a word or a nonword, as quickly as possible, and at the end of the task, complete an unexpected recognition task for the stimuli. Reaction time is not affected by either self-focused attention or evaluation anxiety, but female participants commit more errors in the evaluation condition. Memory is also not affected by self-focus, but participants commit more false alarm errors in the evaluation condition.

Reintegrating permanently excluded primary aged pupils

P PARKHOUSE & J OSMOND, North Somerset Educational Psychology Service

This study is designed to evaluate mainstream school's perceptions of a reintegration programme for children with severe 'Emotional and Behavioural Difficulties', after the pupil has been taken on roll at their school. All of the pupils in the study were previously attending a Pupil Referral Unit (PRU) for Primary Aged Children whose mainstream placements had broken down. The philosophy of the PRU acknowledges the need to be supporting children and their families alongside the more traditional academic and pastoral curriculum. The study finds that: the individualised programmes of reintegration are rated extremely positively by the mainstream schools; the behaviour of the reintegrated pupils compares favourably with their mainstream peers in some situations; every pupil who has been successfully reintegrated is maintaining their mainstream placement; despite high levels of support the reintegration programmes are a cost effect intervention for the Local Education Authority.

Individual level innovation at work: A new model and psychometric measure

F PATTERSON & E FERGUSON, University of Nottingham

Previous research has failed to define a coherent theoretical framework to understand the construct space within which innovation occurs. This paper presents a collection of 10 studies which aim to (1) define a model of individual level innovation by examining the construct space within which it occurs, and (2) develop a new psychometric measure based on this model, for use in selection research. The results show innovation can be

characterised by a four factor model including; (1) Consistency of Work Styles (CWS), (2) Adaptation (AD), (3) Challenging Behaviour (CB) and (4) Motivation to Change (MTC). The model has demonstrated good criterion-related and construct validity. CWS and AD are negatively associated with innovation, and CB and MTC are positively associated with innovation. Findings suggest that innovation occurs at the 'cross-roads' of intelligence and personality, and is best measured in a typical performance paradigm. Implications for future research are made.

Contradictions of exclusion and inclusion: Masculinities and racialisation in 11-14 year old boys

A PHOENIX, Open University

There is currently much debate about how to prevent boys from becoming socially excluded as a result of poor educational performance. This paper aims to contribute to these debates. It uses an interview study of 78, 11 to 14-year-old boys' constructions of masculine identities to examine their positioning within schools. The findings indicate that many boys work hard to position themselves in relation to constructions of popular masculinity as being about toughness, sporting prowess and resistance to schoolwork and teachers. These notions are racialised, with black boys of African Caribbean descent being widely viewed as 'super-masculine'. The paper argues that, for educational policies to be successful, it is important to understand boys' investments in racialised, masculine identities and the difficulties in engagement with the educational process that this poses for some.

The effectiveness of video identification parades

G PIKE, R KEMP, N TOWELL, J ALLEN & G ROWLANDS, University of Westminster

The introduction of video identification parade systems was supposed to overcome many of the problems associated with live parades. A system called VIPER (video identification parade electronic recording) has now been in use by the West Yorkshire Police for several years and has been employed in hundreds of cases. The present paper examines how successful this system has been in comparison to live parades through analysis of case, field and laboratory data. The issues examined include: relative rates of positive identifications; relative cancellation rates; face-only and full-body presentations; and simultaneous versus sequential presentation. The results of these studies show that video parades can be used successfully and appear to result in significantly lower cancellation rates.

Localisation and dynamics of cerebral activations involved in time estimation: Studies combining PET, fMRI and EEG data

V POUTHAS, Hospital de la Salpetriere, Paris, France

Despite the importance of time as a source of information, any sense by which time can be directly perceived has been evidenced. Recently published neuropsychological as well as imagery data suggest that three main brain regions would be involved in time estimation: the cerebellum, the basal ganglia and the frontal cortex. But, it is also known that basal ganglia and cerebellum play an important role in motor control and that frontal areas are involved in attentional and mnemonic processes. Consequently, whatever the brain regions considered, it is difficult to specify their function regarding time perception *per se*. I present a set of results from studies examining this issue in two complementary ways. First, in order to question the specificity of the cerebral network activated during the estimation of a stimulus duration, two perception tasks based either on the duration of a stimulus or on another parameter of this stimulus have been contrasted using PET scan and fMRI methods. Second, as EEG data reflect the rapidly changing electrical activity in the brain evoked by a stimulus or a cognitive event, PET and fMRI data were

combined with EEG data recorded in identical perception tasks, in order to specify in which processing stages the different cerebral areas are involved when time is processed in a perception task. A further challenging aim is to study the variations of the electrical activity and of the hemodynamic response in function of the durations to be evaluated. Some preliminary results are presented along this line.

Evaluation of a protocol to reduce anxiety during routine clinical MR imaging

G PRICE & S J GREY, Institute of Psychiatry, London, & A MATTHEWS, Cognition & Brain Sciences Unit, Cambridge
A protocol to reduce anxiety during brain or spinal MRI scans was developed and evaluated. Thirty five patients underwent standard procedures. Twenty nine experimental patients received written information about the scanning procedure and advice on cognitive strategies for anxiety reduction, a tape-recorded demonstration of scanner noise, a visit to the control room before entering the scanner, a device to signal for adjustment of music volume and a clock visible during scanning. Patients in the experimental group were significantly less anxious during the scan than control patients, as measured by mean subjective ratings made during the imaging procedure and by a retrospective version of the Spielberger State Anxiety Inventory. The results show that scan-related anxiety can be reduced by introducing these simple change to MR imaging procedures, with minimal cost, no special training of staff and no disruption of the running of the MR unit.

The crucial role of practice: Reality or myth?

L PRING & B HERMELIN, Goldsmiths College, University of London
The nature of talent is disputed and psychologists have argued about the different causes to which outstanding performance may be due. Thus while some assume an inherent predisposition as playing a crucial part in the aetiology of excellence others have made the case that the principal factor is simply sustained practice. This paper describes how an individual with autism and calendar calculating ability could deal with hitherto unpractised tasks. The savants' performance was compared with that of a normal control and a Professor of Mathematics. In a short series of studies the participants were required to form changing letter/number associations. The facility with which the savant could master this suggested that practice alone could not have been the sole determinant of his performance.

Neuropharmacology of timing in humans

TH RAMMSAYER, University of Gottingen
When studying brain-behaviour relationships, researchers are faced with the problem manipulation of a single neurotransmitter system may also cause significant changes in levels of activity of other neurotransmitter systems. Therefore, in a series of experiments applying a single-behaviour-multiple-brain-systems strategy, activity of various neurotransmitters in the brain (acetylcholine, dopamine, GABA, glutamate, norepinephrine) is pharmacologically changed. Furthermore, concomitant changes in different psychological functions, such as cortical arousal, speed of information processing, and memory, are measured. The pattern of results, in combination with the different pharmacological profiles of the drugs applied in this series of experiments, suggests that temporal processing of brief intervals below 100 ms is mediated by activity in the mesostriatal dopamine system and, thus, points to the basal ganglia as a neuroanatomical structure possibly involved in timing of brief durations. On the other hand, temporal processing of intervals in the range of seconds is markedly impaired by pharmacologic agents which produce deterioration of (working-)memory functions irrespective of the

neurotransmitter system involved.

Lesbian and gay affirmative therapies: A psychoanalytic perspective

B RATIGAN, Nottingham Psychotherapy Unit
Psychoanalysis and its derivative therapies have a poor record in their treatment of lesbians and gay men. This paper argues for a psychoanalysis challenged to rediscover its original project in which heterosexualities, bisexualities and homosexualities are treated as equally problematic. It is suggested that homonegativity in the clinical setting itself constitutes a 'perversion' of the analytic frame. Psychoanalytic therapy offers a praxis to help lesbian and gay patients understand their intrapsychic worlds and their interpersonal relationships more deeply and has particular relevance in the treatment of lesbians and gay men with serious mental health problems. Recognising that some lesbian and gay patients may benefit from affirmative therapy, the paper argues that, from a psychoanalytic perspective, affirmative therapy represents a withdrawal from a genuine analytic experience and is a liberal-progressive rather than a radical innovation. It risks denying effective interventions to lesbian and gay patients with serious mental health problems.

Angry and avoidant: Attachment and social cognition in childhood disruptive behaviour

M REEVES & E KEOGH, Goldsmiths College, University of London & J SUTTON, Glasgow Caledonian University
The present study investigates four areas of cognitive functioning in Disruptive Behaviour Disorder (DBD). Measures of attachment representation, avoidance of responsibility strategy, theory of mind and executive function are taken. Highly disruptive adolescents were found to differ from low disruptive adolescents with regard to attachment representation, in that the high disruptive group report more angry distress toward their attachment figure. The two groups also differ in terms of their avoidance of responsibility behaviour, where the high group report a greater use of a shifting blame strategy. The groups do not differ in their theory of mind or executive function capabilities. These results are discussed in terms of current theories of DBD and further research.

Understanding and promoting better task design

J RIDGWAY, University of Durham & TC ORMEROD, Lancaster University
An educational task defines an activity for students which is intended to bring about some desirable learning, or to assess knowledge. Task design has considerable significance for both practice and theory. An ESRC-funded project set out to understand design processes better, and to use this enhances knowledge to create Task Design Guides. This paper focuses on data from semi-structured task critique interviews. Specialist and non-specialist designers critiqued a set of 15 middle-school tasks produced by the US National Council of Teachers of Mathematics (NCTM). Specialists were found to refer specifically to design principles; they imagine tasks being used in contexts with which they are familiar; they modify tasks, spontaneously; and they call on a rich source of situations and other problems. The study provides a set of aesthetics to aid non-specialists in their selection of tasks, and in critiques of tasks they create.

The puzzle of the autistic savant: Generativity in autism

N RYDER, L PRING & B HERMELIN, Goldsmiths College, University of London
This study is the first of its kind in that it aims to identify the generative capacity of a group of artistic savants. Although there is a wide range of research in this area none have addressed this topic, despite the generative impairments thought to characterise autism, and the paradox this

creates considering art is usually thought of as a generative domain. Using a standardised test of generative ability, the performance of a group of nine savant artists was compared to three control groups. The first a group of autistic controls matched on non-verbal I.Q, the second group again matched for non-verbal I.Q but without a diagnosis of autism, and finally a group of talented art students. It was found that where as the dimension of fluency was determined by autism, and originality by general ability, flexibility and elaboration were related to artistic talent, and functioned independently of both general I.Q and the deficits associated with autism. The results are discussed in terms of cognitive style and a possible association with weak central coherence.

Connectionist models of scalar timing

J SHAPIRO, Manchester University
In this talk, a review of previous connectionist models of timing is presented. This includes Church and Broadbent's connectionist models, Grossberg and Merrill's model, and the models of Miall. Next, a new model of scalar timing is presented. In this model, the variability of the memory for time intervals is due to a branching process. Neuronal excitation is short-lived, but excited neurons can excite other neurons probabilistically. In a network of such neurons, both the number of active neurons and its standard deviation grows linearly in time. Thus, the scalar property, that the estimation of the time interval grows quadratically with the length of the time interval, arises in a very simple model with a single, short time-scale. This differs from many previous models, in which a range of time-scales for neuronal response or oscillation is required. Decision processes are shown to arise naturally through learning. For example, results of bisection experiments are shown to arise from a system which attempts to learn to discriminate between two time-scales in the presence of variability which grows with the length of the time interval. Results of simulations are presented.

Hypnotic amnesia and the suggestibility of recollection

CH SMITH, University College London
The finding that highly suggestible subjects can exhibit normal priming in the generation of words for which they exhibit a free-recall amnesia has been taken as evidence that hypnotic amnesia (HA) involves a dissociation between explicit and implicit memory functioning. In this study subjects in the hypnosis group free-associate to a list of cue words, receive an amnesia suggestion for this episode, and then free-associate to the same cue-words. Given that priming is independent of conscious recollection, genuine forgetting should be accompanied by a primed frequency of previous associate generation. The finding that suggestible subjects show elevated response times and marked avoidance of previous associates indicates that subjects are construing which pattern of performance is appropriate to 'forgetting'. Findings are discussed in terms of a post-retrieval model of HA that seeks to reconcile its goal-orientated ('enacted') nature with an appreciation that such performance need not always reflect simple conscious simulation.

Parenting types and childhood behaviour problems

E SONUGA-BARKE, J STEVENSON, M THOMPSON, D CORNAH & A RAYNOR, University of Southampton
The aim of the present study is (i) to establish a typology of parenting in a group of parents with difficult to manage children and (ii) to explore its association with parent and child characteristics. Parents with 10-year-old children, many with histories of behavioural problems, provided information about their parenting practices, children's adjustment and own mental health. Three parenting dimensions (Affect, Firmness and Meta-Cognitive Awareness) were identified giving four parenting clusters (Authoritative, Permissive, Hostile/disengaged and Analytical). Hostile/disengaged parents were extremely critical

of their children and had a history of depression. Their children had early established and deteriorating behaviour problems. Permissive parents' children had late onset problems. Authoritative parents children had early established but recovering problems. Analytical parents had well-adjusted children. Strictness displayed in a context of care and emotional warmth combined was the most effective parenting style.

The psycho-physiological effects of WWII trauma on the British female civilian population

R SOUTHERN & N HUNT, Nottingham Trent University

This presentation argues that the current means of assessing the post-traumatic effects of Second World War experiences are inappropriate to certain individuals within the ageing population. The DSM-IV classification of PTSD, whilst theoretically pertinent to the combat-related and POW experiences of military personnel, fails to account for the traumatic long-term environment experienced by wartime female civilians. Attention is drawn to the classification's gender-bias, the inflexibility of the stressor criterion, the numerical rigidity of the symptom configuration and the absence of collateral psycho-physiological sequelae. A study of wartime civilian women revealed that a large proportion of participants demonstrated 'sub-clinical' PTSD reactions together with a high incidence of psycho-physiological conditions ($X^2=30.89, df=2, p<0.05$). Ongoing research involves comparisons with male civilian experiences and the possible moderating effect of quasi-military service. Finally, a theoretical model of post-traumatic response is offered to accommodate the research findings.

A community in transition: Changes in place attachment and identity in the context of an enforced relocation

G SPELLER, E LYONS & C TWIGGER-ROSS, University of Surrey

The aim of this paper is to focus on the process of change over time in participants' attachment to their home and village and to explore the relationship between place attachment, place identity and identity processes. As villagers were relocated from traditional late 19th century terraced housing to new semi-detached housing with front and back gardens, it provided an abrupt and clear incident of socio-spatial change on an individual (home) and collective (community) level. Brerakwell's Identity Process Theory is used to provide a framework for themes such as continuity of the self and continuity of the self reflected in place; the importance of efficacy within the old and new environment; the change from collective distinctiveness of a mining community to an emphasis on achieving individual distinctiveness; and the effect on participants' self esteem. We note how the meanings attached to their home, village and community by participants changed over time. Differences in the way participants constructed their identities are also discussed. The overall findings of the study point to a shift within the community from collective to individual functioning and support the transactional world view that the unit of analysis is the person within the environment, that the environment and time must be taken into account in any analysis such as this and that the process of change involves a dynamic blend of temporal, spatial and psychosocial aspects.

Modelling interval timing

JER STADDON, Duke University, North Carolina, USA

No existing model captures all the features of interval timing in animals. The greatest effort has been expended on steady-state data from relatively restricted situations involving one or two fixed intervals. Some of those data conform to a scalar or logarithmic model, but many do not. We have proposed a theory based on principles of memory dynamics derived from the multiple-time-scale (MTS) model of habituation.

The MTS timing model can account for data from a wide variety of time-related experiments: proportional and Weber-law temporal discrimination as well as deviations from Weber's law in relative-duration-discrimination experiments, transient as well as persistent effects of reinforcement omission and reinforcement magnitude, the choose-short effect and its analogue in number-discrimination experiments. Resemblances between timing and counting are an automatic consequence of the model. Transient and persistent effects of drugs on time estimates can be interpreted as well within MTS theory as in competing views. Real-time physiological data conform in surprising detail to the assumptions of the MTS habituation model. But many questions remain: The choose-short effect is limited in certain ways that have not yet been satisfactorily explained. There are transient effects of interval sequences that have not yet been reconciled with steady-state data. And the process by which temporal discriminations are acquired is still obscure.

Responsibility, negative mood and catastrophic worrying

H STARTUP & GCL DAVEY, University of Sussex

Catastrophic worrying involves the process by which worriers perceive progressively worse and worse outcomes to a specific worry topic, and this is usually the result of them posing automatic questions of the 'what if ...?' kind. When asked to catastrophise a worry or iterate what is 'good' about a topic, pathological worriers iterate more steps than non-worriers. This paper describes a study which shows that this perseverative iterative style that worriers possess is linked to feelings of responsibility and negative mood. When involved in a task under conditions of high responsibility and an induced negative mood, individuals appear to use their negative emotional state as an indicator that the problem is not resolved, and so persevere further with such tasks. Issues of responsibility may thus mediate the relationship between negative mood and the perseverative iterative style typical of catastrophic worriers.

The impact on parents of behaviour problems in children with spina bifida and hydrocephalus

J STEVENSON & I PIT-TEN CATE, University of Southampton

The results of a questionnaire-based survey of the difficulties faced by children with spina bifida and or hydrocephalus are presented. Previous studies have suggested that these children may experience an elevated rate of emotional problems. The present sample comprised over 350 families with a 6 to 12-year-old child with one of these conditions. The rate of behavioural adjustment problems in this sample was 57 per cent, similar to the results of a recent similar study of hemiplegia. The impact scores reached clinical significant levels for 81 per cent of the families, compared to 13.5 per cent in the general population. The relationship between aspects of parental response to disability and the children's behavioural adjustment were analysed. The implications for psychologists working with these children and their families are discussed.

A longitudinal study of well-being, activities of daily living and health

J STEVENSON, R BRIGGS, PG COLEMAN, M MULLEE & J TURNBULL, University of Southampton

This paper presents the results of a structural equation model analysis of measures of a sense of well-being, activities of daily living, perceived health (risks and two measures of physical health (status and threats to health). The data is from a longitudinal study of a sample of 235 elderly persons aged over 65 years from the general population. They were assessed at three time points a year apart. Confirmatory factor analysis was used to identify the latent variables underlying aspects of functioning at each of the

three time points. There was considerable continuity in sense of well-being, activities of daily living and, to a lesser extent, in health status. Activities of daily living had an impact on health status but only perceived health had an impact on sense of well-being. The results suggest that the impact of physical health on subjective well-being is mediated via perceived health status.

The effect of aggressive and non-aggressive stimuli on event related potentials

S SURGUY & A BOND, Institute of Psychiatry, London

Event Related Potentials (ERPs) are used to investigate differences in cognitive processing of aggressive and non-aggressive stimuli, in a normal population, with respect to pre-assessed level of aggression, using the Buss-Durkee Hostility Inventory (BDHI). ERPs are recorded from frontal (Fz), vertex (Cz) and parietal (Pz) midline scalp sites, in both a standard auditory and a modified oddball paradigm, using aggressive and non-aggressive words. In the auditory oddball condition, P300 latencies but not amplitudes show significant relationships with BDHI scores. Those with higher, compared with lower BDHI scores, show longer latencies, suggesting stimulus evaluation time is longer in more aggressive participants. P300 latencies, to aggressive and non-aggressive words, do not differ between participants. However, Fz amplitudes are smaller than Cz in high BDHI scorers, the opposite was found in low scorers. This suggests aggressive stimuli are less efficiently processed at the frontal site in individuals with higher levels of aggression.

Language acquisition in German-speaking children with cochlear implants

G SZAGUN, Institut fuer Kognitionsforschung

The acquisition of language is studied longitudinally in a sample of 22 young hearing-impaired children with cochlear implants and 22 normally hearing children. Spontaneous speech samples are collected over a period of 18 months, starting at the one-word stage. Results indicate that overall grammatical progress, as measured by MLU (mean length of utterance in morphemes), is slower in hearing-impaired children. Concerning inflectional morphology, hearing-impaired children are particularly slow in acquiring noun plurals and case morphology on articles. In German, articles can function prenominal, which makes them perceptually salient. Both groups of children acquire pronominal articles earlier. This effect is magnified in the hearing-impaired group. Vocabulary structure differs in terms of frequencies of nouns and verbs which are lower for hearing-impaired children, whereas adjectives are used more frequently than in the control group. Results are discussed in terms of the effects of deficient auditory processing of incoming speech.

Psychosocial theory, public health and the gendered body

C SWANN & P SINKLER, Health Education Authority

Constructionist approaches within psychology have problematised dualisms inherent in Western culture, repositioning 'experience' as socially constituted. These approaches are of limited use to psychologists working with gender, health and the body, domains that inhabit an 'experiential interface' between the social and biological: 'lived experiences' of reproduction, illness and corporeality cannot easily be dismissed as social constructions. Public health and psychology are increasingly linked, and health and gender psychologies need to challenge both traditional and constructionist approaches which fail to encompass corporeal and social domains. This paper reviews the representations of the gendered body in public health policy over the last ten years, mapping the shift from notions of the 'passive'

individual, to the 'risky' self, and now, with the publication of a new public health strategy 'Our healthier Nation', to bodies that are inseparable from the communities and cultures they inhabit. The paper concludes with some tentative suggestions for a new psychology of public health.

The discursive construction of time in narratives of personal life and identity

S TAYLOR, The Open University

This paper analyses transcribed talk to investigate the discursive construction of time in narratives of personal life and identity. It also explores the interrelated temporal and spatial dimensions of such identities. The analysis shows the centrality and flexibility of time as a discursive resource which is drawn on by speakers in order to link life events coherently; to establish consecutive life-stages corresponding to different places of residence; to reify an absent time-place as a valued possession and, in contests around national places, to warrant claims of belonging and do rhetorical work against competing claims.

Why do babies cry more in the evening: Circadian influences on sleep and mood in a new-born

P TOTTERDELL, University of Sheffield

New-born babies commonly cry more in the evening for the first few months of life. This study tests the view that the diurnal crying pattern and its decline reflects the development of circadian control over the sleep-wake cycle. Sleep times and mood ratings for a full-term female newborn were recorded in a diary by her parents for 210 days, starting a fortnight after her birth. Analysis of variance and cosinor analysis showed a circadian rhythm in mood (in which the newborn was unhappiest in the evening) that declined in strength over time, and a circadian rhythm in sleep that increased in strength. Regression analysis indicated that mood was influenced by an interaction between time of sleep and duration of sleep. The results suggest the importance of adopting sleep routines that encourage circadian alignment in newborns.

Information-processing models of timing

M TREISMAN, University of Oxford

The model of time discrimination and estimation proposed by Treisman (1963) has been described as the first information processing model of timing (Church, 1984). I briefly review how the model was conceived and developed, and consider some further developments of the basic ideas by myself and others.

Face-superiority and E-FIT construction: A minimal face experiment

J TURNER & G PIKE, University of Westminster, N TOWELL, Open University & R KEMP, University of Leicester

E-FIT is a face-composite construction system widely used by police services in the UK. During its development,

E-FIT's creators took into consideration face perception research, including studies of the importance of configural information. One of the key assumptions was that it is psychologically important to see the individual features as part of a whole face, rather than in isolation as was the case with earlier systems. However, a potential problem with this technique is that inaccurate information may be presented which overshadows the witness' memory of the face. Findings from more recent research suggest that one possible means of overcoming this is to use a 'minimal face'. The present study investigates whether the use of minimal face templates can improve the accuracy of E-FIT construction. Results are discussed with reference to the face-superiority effect.

Forget passwords, use passfaces: An evaluation of a personal authentication system based on face recognition

T VALENTINE, Goldsmiths College

Passwords or personal identification numbers (PINs) are widely used for authentication of identity but are difficult to remember. An experiment is reported that evaluated an alternative system based on face recognition. The system requires each of four faces chosen during an enrolment procedure to be selected from a grid of nine faces. Participants either logged-on every working day for two weeks after enrolment or only once, either seven or thirty days later. All participants selected their Passfaces correctly by the third attempt. After a 5-month delay, all participants who had initially logged-on over 10 working days and 71 per cent of participants who had logged-on only once previously, correctly selected their Passfaces in three attempts or less. It is concluded that face recognition provides a robust and potentially important tool for personal authentication.

An evaluation of the fairness of police line-ups and video identifications

T VALENTINE & P HEATON, Goldsmiths College

Mistaken eyewitness identification is a major source of miscarriages of justice. In England and Wales, the vast majority of identifications are obtained using a traditional 'live' identity parade (or line-up), although video identifications are being used more frequently. Records of line-ups and video identifications used in actual criminal cases were obtained. The fairness of the procedures was compared by use of a mock witness procedure. In a perfectly fair line-up the suspect would be chosen, by chance, 11 per cent of the mock witnesses. Twenty-five per cent of mock witnesses elected the suspect from photographs of live line-ups, compared to 15 per cent of mock witnesses who selected the suspect from video identifications; this difference is statistically significant. It is concluded that the video line-ups were fairer than the live-ups, and therefore that wider use of video identifications has the potential to improve the reliability of eyewitness identification evidence.

On the role of the phonological loop in temporal processing

A VANDIERENDONCK & V FRANSSSEN, University of Ghent, Belgium

We present a series of experiments that tested the involvement of the phonological component of the working memory system (Baddeley and Hitch, 1974). It is clear from previous research that both temporal tasks (e.g. time estimation, interval reproduction, interval production) and nontemporal tasks call on processing systems that may be required for the execution of both kinds of task. A central question is which processing modules of the multicomponential working memory system are required by temporal tasks. To shed light on this issue, we have studied temporal and nontemporal tasks in concurrent designs. We present evidence showing that articulatory suppression impairs prospective timing performance in short time intervals. In addition, we also found in a preload design that verbal information kept in temporary storage impairs prospective reproduction performance both in very short and short time intervals. Further experiments were designed to explore the limiting conditions of these findings and to find out to what extent participant strategies loading the phonological system may play a role. The results are discussed with respect to the role of some working memory components in temporal tasks.

Cognitive deficits affecting time perception

A VENNERI, University of Aberdeen
Experimental evidence suggests that discrete

cognitive deficits may result in abnormal time perception. Studies with brain-damaged patients have demonstrated that lesions affecting some cognitive functions such as memory or attention may cause alteration in time accuracy. More recent studies, however, have proposed that lesions either of the right or the left hemisphere may play a differential role in determining a disturbed perception of time flow. There is evidence that time perception is abnormal in right brain-damaged patients or in patients suffering from visuospatial memory deficit. One could, therefore, hypothesise hemispheric asymmetries in time perception. The results in the literature are inconsistent, and the disparity between methods used to evaluate time perception abilities across studies makes it difficult to compare their findings. Functional neuroimaging studies and cognitive studies from our own laboratory do not find any convincing evidence of this hemispheric asymmetry in time perception. Rather they indicate a bilateral representation of time keeping mechanisms. This finds plausible justification in the intrinsic nature of time keeping tasks, relying very heavily on attention and memory.

Validation of a Supervisor Interactional Style Questionnaire

N WAGER, G FIELDMAN & T HUSSEY, Buckinghamshire Chilterns University College

The Supervisor Interactional Style questionnaire is the development of several existing measures used to assess subordinates perceptions of their supervisors' interactional style. The study of the questionnaire, consisting of 85 supervisor descriptions, permitted the systematic reduction of the original 80 items pertaining to supervisor interactional style and a determination of the probable spread of scores. Estimates of internal consistency (Cronbach's alpha=.9569) and criterion-related validity ($r=.51192$) indicate that it has satisfactory reliability and validity. Factor analysis, with oblique rotation, indicates four dimensions of interactional style. Empowerment accounts for the greatest amount of variance (36.1 per cent) followed by consideration (6.53 per cent), social maturity (4.95 per cent) and interpersonal fairness (3.91 per cent). Employees, who perceive their supervisor as practising equity of treatment as opposed to favouritism, appraise their supervisors as having an overall more favourable interactional style and report greater job satisfaction.

Internal clocks and human timing

JH WEARDEN, Manchester University

The last 25 years have seen an immense growth of interest in the old idea that aspects of timing behaviour in humans and animals is mediated by some sort of internal clock. During this period, the development of powerful theoretical models and novel timing procedures linked to them has revolutionised our understanding of how organisms might be sensitive to the duration of stimuli and responses. My talk focuses particularly on human timing, and will illustrate how clock-based timing models have enabled meaningful animal/human comparisons in the timing domain, have stimulated developmental studies of timing, and have provided a powerful framework for attacking classical problems in human time Psychology as well as underpinning studies of how timing might be performed by brain mechanisms.

Talk, power, and the childbearing body

J WEAVER, Cambridge University

Semi-structured interviews were conducted both antenatally and postnatally with primiparous childbearing women and their midwives. The texts of these interviews were deconstructed in an attempt to explore the tensions between the childbearing body and the discourse around it. To do this, the power differential between obstetric carers and their clients had to be taken into account, as was the rhetoric which places the medical model of childbirth at odds with both the control requirements of the childbearing woman and the ability of her body to give birth unaided.

Two specific aspects of childbirth, pain relief and the second stage of labour, were explored in order to try to better understand how these issues worked together at a material-discursive level.

The history of hypnosis

V WEST, University of Luton

This paper reviews the history of hypnosis, charting the key theoretical developments in the field. The theory of animal magnetism is presented, along with other early psychological and neurological theories of hypnosis. Similarities between the various historical perspectives and more contemporary theoretical viewpoints are discussed, with particular reference to imagination, individual differences, the role of suggestion and the polarisation of the field between an emphasis on external influence as compared to a participants' inner processes. Methodological developments are also reviewed and the paper concludes with a discussion of the current theories and models of hypnosis.

In search of the 'Duchenne smile': Eye movement evidence for a marker of the genuine human smile?

L WILLIAMS, University of Sydney and Westmead Hospital, C SENIOR & AS DAVID, Institute of Psychiatry and GKT School of Medicine & C LOUGHLAND & E GORDON, University of Sydney and Westmead Hospital

Contraction of the muscle that surrounds the eye (*obicularis oculi*) produces 'crows feet' wrinkles to the side of the eyes and is seen in genuine spontaneous smiles. This distinct anatomical configuration is known as the 'Duchenne smile' after the observations of the 18th century French anatomist, Duchenne de Boulogne. Little is known of the visual and cognitive strategies that underpin perception of the Duchenne smile. Ocular-dynamics (eye movements) are the most direct experimental measure of visual attention. In this study, spatiotemporal indices of eye movements were number and duration of foveal fixations to the Duchenne (crows feet) area relative to the total face area. It was predicted that there would be relatively greater visual attention to the Duchenne area for happy facial expressions compared to negative (sad) and baseline (neutral) expressive controls. As hypothesised, subjects ($n=63$) made proportionately more fixations of longer duration to the Duchenne area for happy facial expressions. The nature of these findings suggest (i) a 'hardwired' response may be involved in reference to the anatomical marker of the genuine smile and (ii) human observers may have evolved to distinguish the Duchenne smile because it could serve an important communicative role (e.g. social appeasement).

Organisational ability and planning effectiveness

S WILLIAMS, University of Sussex

Current research into the ability to organise and meet one's plans suggests that people generally make over-optimistic predictions regarding completion times of daily activities. The present research seeks to explore this 'planning fallacy' at an individual level and elucidate the moderating influence of organisational ability in leading to successful task completion. A scale to measure organisational ability was constructed revealing a four factor structure. Subjects were required to make predictions for when a real-life task would be completed. The affective factor of preference for organisation was found to be significantly related to the difference between predicted completion time and actual completion time. The implications of this finding are discussed.

Love and the work ethic – construction of intimate relationships as achievement

C WILLIG, City University, London & A BALCOMBE, Middlesex University
This paper discusses the ways in which

individuals account for the break-up of an intimate relationship, and focuses upon the role of agency. Sixteen participants who had recently experienced such a break-up were interviewed. Their accounts were analysed using narrative analysis and discourse analysis. A number of diverse and sometimes conflicting constructions of agency are identified. A construction of intimate relationships as an achievement was taken up by most of the participants. Such a construction resonates with the beliefs and practices associated with the Protestant Work Ethic whereby the individual's efforts are expected to be rewarded with success, and where work and effort are highly valued. The paper examines participants' endorsement of such a 'work ethic' and traces its implications for attributions of responsibility and/or blame within the context of relationship maintenance. It proposes that the Protestant Work Ethic as an ideological construct may be more pervasive than previously thought and that it may be implicated in people's most intimate experiences.

The association between bullying and behaviour problems among primary school children

D WOLKE, S WOODS & L BLOOMFIELD, University of Hertfordshire

The association between bullying and behaviour problems has elicited inconsistent findings and placed heavy reliance on self-report techniques. 1639 children (6-year-olds/year 2: 722; 8-year-olds/year 4: 917) were individually interviewed about physical and relational bullying experiences. Parents subsequently completed a measure of their child's behaviour, the Strengths and Difficulties Questionnaire (SDQ). Highly significant differences emerged according to bullying sub-group. Bully/victims whether involved in physical or relational bullying had the highest behaviour problem scores and most behaviour problems within the clinical range. Boys had significantly more behaviour problems than girls. Behaviour problems in the clinical range for relational bullying were less pronounced compared to physical bullying. Children involved in both physical and relational bullying of some kind were the group with the highest risk for externalising and hyperactivity behaviour problems. Further study of the group bully-victims, relational bullying with reference to different measurement techniques and behavioural interventions are discussed.

Bullying behaviour and school-related factors among primary school children in the UK and Germany

D WOLKE & S WOODS, University of Hertfordshire

Differences in definitions and methodologies for assessing bullying in primary school children between countries have precluded direct comparisons of prevalence rates and school factors related to bullying. 2377 children in the UK (6-year-olds/year 2: 1072; 8-year-olds/year 4: 1305) and 1538 in Germany (8-year-olds/year 2) were individually questioned using an identical standard interview. In both countries the types of bullying to victimise others were similar, boys were most often perpetrators, most bullies were also victims (bully/victims), most bullying occurred in playgrounds and the classroom and SES and ethnic mix of classes only showed weak associations to bullying behaviour. Major differences were found in victimisation rates with 24 per cent of English pupils becoming victims every week compared to only 8 per cent in Germany. In contrast fewer boys in Britain engaged every week in bullying (2.5-4.5 per cent) than German boys (7.5 per cent) while no differences were found between girls. In England children in smaller schools, rural schools and smaller classes were more often victimised. Presence and detail of anti-bullying policies in schools revealed no relationship to bullying prevalence. Further study of the group of bully/victims; schooling differences in UK versus Germany and implications for prevention of bullying are discussed.

Cognitive models of human timing

D ZAKAY, Tel-Aviv University, Israel & RA BLOCK, Montana State University, USA

Human timing of short intervals is thought to involve cognitive processes which are highly context-sensitive. Two important contextual factors are the methodological paradigm (i.e. prospective or retrospective) and the measurement method (i.e. Verbal estimation, production, or reproduction). Whereas prospective duration judgements are obtained when a person is aware of the need to judge the duration of an ongoing interval, retrospective duration judgements are obtained when a person becomes aware of the need to judge the duration only after it has ended. The available evidence reveals that different cognitive processes underlie prospective and retrospective duration judgements. Retrospective duration judgements are based mainly on the retrieval of relevant information that can be used as a representation of the target duration. It is assumed that information about contextual changes, both environmental and internal (i.e. cognitive and emotional changes), which occurred during a target interval is used to construct retrospective duration judgements. Thus, models of retrospective duration judgement do not include a special timer. Prospective duration judgements are based mainly on attentional processes. Models of prospective duration judgement can be categorised as models with or without a timer. We recently proposed an attentional-gate model of prospective duration judgement. This model assumes the existence of a timer which emits pulses at a regular rate. These pulses are accumulated by a cognitive counter, but on their way to the counter they must pass through a cognitive gate which is controlled by the amount of attentional resources allocated for temporal information processing. The various models of both prospective and retrospective duration judgements are presented and compared in light of empirical evidence, and the nature of the required cognitive models of human timing discussed.

Applied and developmental aspects of timing

D ZAKAY, Tel-Aviv University, Israel & RA BLOCK, Montana State University, USA

Timing involves cognitive processes that are essential in the optimal adjustment of an organism to its environment. Organisms, including humans, must time their behaviour in order for it to be optimal, or even successful. In cases of mental disorders, timing is one of the first cognitive functions that is impaired, causing a severe deterioration in a person's ability to function in physical and social environments. Timing plays a crucial role in many typical daily behaviours like crossing a busy street, driving, dancing, singing, and playing basketball. We discuss models of human timing which can provide explanations for the impact of timing on human behaviour. The implications of these models for understanding behaviour are clarified by reviewing several typical examples. One domain in which timing is highly important is that of consumer behaviour. People have to decide how much time they are willing to wait for receiving a service or buying a product. These decisions are based on estimates of waiting durations. Judgements of waiting durations are also important for maintaining normal human communication (i.e. durations of intervals between asking a question and receiving an answer) and, from a human-factors point of view, for designing optimal human-computer interaction (e.g. defining acceptable delays of computer responses to queries). Timing plays a central role in determining causal relationship between events, a process in which humans attempt to understand their environment. Additional questions of interest concern accuracy of temporal behaviour and whether or not people can be trained to make accurate time judgements.