

**Institution: University of Liverpool**

**Unit of Assessment: 4 - Psychology, Psychiatry and Neuroscience**

**a. Context**

The reconfigured Department of Psychological Sciences builds on a long tradition of University of Liverpool (UoL) researchers applying science to real world issues. Our Knowledge Exchange (KE)-related income over the REF period is more than £3M. The wide audience for, and many beneficiaries of, our activities reflect the broad spectrum of our psychological expertise, and includes: health agencies; pharmaceutical, technology and food industries; emergency and security services; the judiciary; government; the third sector and, directly and indirectly, the public. Our impact increasingly derives from an interdisciplinary approach, across not just our research groups but the University, as outlined in REF5. Basic and applied research conducted by the Mental Health in Context, Psychology of Healthcare, Appetite and Obesity, Language and Development and Addiction groups impacts on **health and welfare** (e.g. patient-centred interventions in psychosis; improved services for cancer patients); **international development** (ameliorating infant mortality linked to perinatal depression in developing countries); **practitioners and services** (development of new paper- and web-based language assessments, working with NHS and charities to improve public awareness of alcohol and tobacco issues), and **commerce** (appetite research leading to pre-clinical and clinical anti-obesity drug trials, and new food manufacturing technologies for weight management). The Perception group's major impact is on **commerce** (working with international engineering companies translating sensory research into better technology and design). The Forensic and Investigative Psychology group's substantial impact can be seen in supporting **practitioners and services** (improving procedures and policies within criminal justice, security and emergency agencies, from responses to disasters, risk reduction and security enhancement, to improving witness testimony). We are involved in consultancy, training and joint/contract research with many stakeholders, from local government to the World Health Organisation (WHO), through which we inform **public policy and services**. We have extended the audience for our research by direct public engagement through University sponsored events (e.g. our Security and Conflict lecture series) and interactive exhibits to large audiences in Liverpool's popular cultural centres (e.g. in Liverpool FACT), as well as via broadcast and published media, leading to impacts on **society, culture and creativity**.

**b. Approach to impact**

We use diverse mechanisms to support the generation of impact from our research, overseen by an Impact Working Group at departmental level, and utilising institutional processes and support.

**Strategy and Staffing Policies:** Our interdisciplinary research focus ensures our projects address real world problems, extending the reach of our impact to new beneficiaries. Staff are supported in impact activities by the University's Business Gateway, which supports collaboration in consultancy, networking events, CPD, contract and collaborative research, and are encouraged to consider beneficiaries and impact potential at all stages of research (assessed by internal review of funding applications). Impact activities are monitored at annual Professional Development Reviews (PDRs) and by promotional criteria linked to defined role expectations in research and KE. Targeted staff recruitment has increased capacity in our research groups to develop new collaborations, thereby increasing our reach (e.g. *Addiction*: Christiansen, Rose; *Appetite*: Boyland, Hardman, Robinson; *Perception*: Makin; *Forensic & Investigative*: Thorley, Waring; *Language & Development*: Chang, Gobet; *Mental Health in Context*: Bentall, Corcoran, Eames, Read, Slade, Taylor; *Psychology of Health Care*: Noble).

**Use of internal funding to pump-prime new relationships:** We have obtained institutional pump-priming in annual KE voucher competitions funded by the University. This has allowed us to establish collaborations with Merseyside Fire and Rescue Services, Liverpool PCT (now CCG) and social care services, HJ Heinz, the Brazilian National Cancer Institute, and it supports interactive public presentations of our research with Tate Liverpool, the Foundation for Art and Creativity, and the Louisiana Museum of Modern Art, Denmark.

**Follow-on funding to extend impact:** Successful outcomes from initial collaborations with user-groups have secured external funding to extend impact into new areas. For example, Liverpool has the highest cancer incidence in England, and the Liverpool Psychology Service for Cancer was established to provide evidence-based psychological services to all affected (patients, carers and

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health professionals), through support and training of NHS personnel and regular interaction between university researchers, NHS staff and local service users. This programme has led to wider impact through NIHR and MRC-funded projects for improved psychological support and intervention in breast cancer and uveal melanoma (predicting who will develop persistent psychological problems after breast and prostate cancer; developing educational materials to reduce delay in reporting oral cancer symptoms).

**Major collaborative programmes** have led to substantial impacts regionally and nationally, e.g. we have collaborated in an MRC-funded trial of psychosocial interventions for bipolar disorder (with the University of Lancaster), a NIHR multi-centre trial of a novel intervention for the negative symptoms of psychosis (with Queen Mary College, London & Institute of Psychiatry) and a NIHR-funded study of recovery from psychosis (with Manchester), designed to facilitate patient-centred approaches to severe mental illness. Our *Appetite and Obesity* group is collaborating with the Universities of Oxford, Cambridge and East Anglia, and with the British Heart Forum, on a £1M MRC NPRI weight loss referral trial for adults in primary care. This will evaluate the clinical and cost-effectiveness of three weight loss interventions. The group also co-ordinates the EC Framework 7 Satiety Innovation programme (€6M award plus €2M matched funds; aims to identify food ingredients and processing methods to develop satiety-enhancing foods to aid weight control).

**Relationships with industry:** The *Appetite and Obesity* group has established relationships with SMEs and multinationals (e.g. Coca Cola, California Prune Board, Danone, Lipid Nutrition, Ingredion, Weight Watchers, Tate & Lyle). *Perception* has established a Perception Action Network with Manchester, Lancaster and the Daresbury Virtual Engineering Centre, with a specific brief to translate sensory research into better technology and design: it has joint projects with Sony, Jaguar Land Rover, Dutch Aerospace Research Labs and GE Avionics (e.g. 3D perception and video viewing; evaluation of sound-related comfort ratings for aircraft passengers). A Unilever Fellowship funds applied research on the neurophysiology of attentional and emotional responses to olfactory and gustatory stimuli. In collaboration with NTT in Japan, the *Language & Development* group is creating software for automatic recognition, coding and transcription of children's speech.

**Relationships with practitioners:** The *Psychology of Health Care* group assesses the clinical- and cost-effectiveness of health visitor training in psychological interventions for postnatal depression, and the *Mental Health in Context* group has had international impact through studies in Pakistan, which identified an association between perinatal depression and infant malnutrition, and demonstrated that non-specialist community workers can be trained in techniques that significantly reduce depression rates. The *Language & Development* group's ESRC and EPSRC-funded projects are developing paper, web and smartphone-enabled language assessment tools aimed at parents and health professionals, to monitor language, facilitate early diagnosis of language delay and inform the creation of early intervention programs (see e.g. UK-CDI). *Forensic and Investigative Psychology* enroll PGR students who are police officers, who use their research for evidence-based practice. The group has direct impact through widespread adoption of their work for training and improving procedures. Our Identifying Vulnerable People Guidance is used by UK police as a screening tool in countering radicalisation; the Liverpool Interview Protocol, a witness memory enhancement procedure, is being adopted by UK and overseas police forces, and the National Policing Improvement Agency (now the National Crime Agency) use the group's work in its command training for chemical, biological, radiological, and nuclear incidents. This work is funded by the FBI, UK police forces, Association of Chief Police Officers (ACPO), Home Office, Chief Fire Officer Association, NPIA, Ambulance Service, Office for Security & Counter Terrorism and the Crown Prosecution Service.

**Engagement with policy-makers:** The quality of our research has been recognised by policy-makers and has led to contributions to national and international guidelines, including the Guidelines Development Group for the WHO Mental Health Global Action Programme (MHGap), 2009, the WHO report *Marketing of foods high in fat, salt and sugar to children: update 2012–2013*, and Universities UK's submission to the Home Affairs Select Committee report on the roots of violent radicalisation (2011). We also play a key role within the city and region; *Kinderman* is represented on the Liverpool City Council's Health and Wellbeing Board which determines local public health policy, and *Rose, Bennett, Boyland, Harrold* and *Halford* sit on relevant sub-committees and working groups.

**Public engagement and awareness raising:** UoL has a competitive national and international media profile to which the Department makes a positive and proactive contribution. Two of the five

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most viewed news stories on the University website in the 12 month period to July 2013 were from Psychological Sciences (*dwelling on negative events is the biggest cause of stress and people with depression pursue generalised goals*). Many of our news outputs result in global media coverage. With Alcohol Research UK & Alcohol Concern, the *Addiction* group explores how to improve dissemination of alcohol research and optimise national campaigns targeting alcohol abuse (e.g. *Dry January*). Other public engagement activities have included radio, TV and press interviews (e.g. *Bentall* and *Kinderman's* 2009 two-part BBC Horizon/Discovery Channel documentary on the diagnosis of mental illness), appearance at popular science events (e.g. BBC Festival of Ideas 2013, Hay 2011-13, Cheltenham 2012, 2013, Wilderness Festival, 2013), interactive public presentations of our research (e.g. with Tate Liverpool), and popular science writing (e.g. *Ambridge* shortlisted for the 2012 Guardian/Wellcome Trust Science Writing Prize; *Bentall's* 'Doctoring the Mind' shortlisted for the 2010 MIND book).

**c. Strategy and plans**

Our strategic aims for impact are (i) to promote the impact of research through its application in clinical and professional practice, business and industry, informing policy and improving health and well-being; (ii) governance, teaching, clinical services and research with Government agencies, the NHS, emergency services, third sector, professional groups and industry; (iii) high quality professions-oriented CPD & PGT, to promote practitioners' life-long learning; (iv) engagement with communities via events, advisory boards, social enterprises and the media, and (v) partnerships with the City of Liverpool and other key stakeholders. The Department's Impact Working Group, comprising staff from each research group, is responsible for delivering this strategy.

The Department takes a lead in strategic planning for impact through the Head of Psychological Sciences who is a member of both Faculty and University strategy groups. The Department uses the University's online consultancy process to capture, manage and cost impact activities more efficiently, and to support, in particular, under-recognised activities (e.g. the wider development of CPD across the Department). Our policy activities will be increasingly co-ordinated through UoL's Heseltine Institute for Public Policy and Practice, within which *Corcoran* leads the Health & Wellbeing theme. For example, through this we are developing programmes on the psychological and behavioural effects of urban environments on public mental health (strategic aim i). Further initiatives include rolling out decision-making tools for criminal justice services such as the police and FBI (aim ii); through our alliance with Lancaster and Manchester Universities, applying our findings on trauma in psychosis to develop new psychological interventions for patients with trauma histories (aim iii), and prioritising the North West Doctoral Training Centre's support to PhD projects with CASE partners (thereby improving collaborations with strategically important partners, aim v). ECRs and PG students will continue to be encouraged to engage with the social and policy impact of their research through training days and outreach events (aim iv), e.g. students take modules such as 'Popular Science & Public Understanding of Science' and 'Making a Business Out of Science'. We are investing in major projects with potential for significant, widespread impact. For example, UoL has invested in the North West Coast NHS Collaboration for Leadership in Applied Health Research and Care (CLAHRC) (£22M total value), to address health inequalities through improvements in public health and the implementation of evidence-based interventions. *Bentall* is lead for the Mental Health theme, which will study the causes of mental health inequalities and develop policies and interventions to reduce them.

**d. Relationship to case studies**

We have chosen four case studies that exemplify our strategy in practice. ***Advertising obesity? TV marketing, food promotion, diet and body weight in children*** demonstrates how the findings from a long-standing research programme were translated into impact on a major cause of preventable morbidity within the UK and globally. ***Providing evidence based solutions in criminal justice and critical incidents*** demonstrates how our close collaborations with criminal justice agencies have informed their activity worldwide. ***Extending psychological interventions to difficult to treat and difficult to reach patients*** demonstrates how we have been working with the NHS and WHO to bring therapies to groups who have previously been thought difficult to treat or who are located in places beyond the reach of conventional services. The work described in ***Improving clinical outcomes by improving healthcare communication*** shows how close collaboration with NHS services allowed us to correct false assumptions about clinician-patient relationships, enabling services to help patients suffering from serious and sometimes life-threatening illnesses.