

Institution: University of Reading	
Unit of Assessment: 4 Psychology, Psychiatry and Neuroscience	
<p>a. Context The School of Psychology and Clinical Language Sciences fosters a culture that values and promotes the impact of its research beyond academia. We have established a strong clinical focus and close links with industry. Much of our research is designed to generate impact directly, particularly in the areas of health and welfare, industry and public policy. Our non-academic beneficiaries most commonly include, but are not limited to, health care and education providers (e.g. NHS and charitable organisations), patients and their carers, and industrial partners (e.g. food and pharmaceutical companies), as illustrated by examples of impact from our School research groups:</p>	
Research group	Examples of impact
Nutrition and health	Promoting healthy eating in infants and young children. Informing industry on the effects of diet (e.g. on cognition and mood). Developing interventions to improve health using natural products (e.g. cannabinoids, cocoaflavanols).
Perception and action	Influencing clinical practice for sensorimotor conditions (e.g. infant visual impairments, Huntington’s disease). Improving road safety in the UK and internationally (e.g. through improving testing for new drivers).
Language and cognition	National and international impact on clinical assessment and treatment in language and communication disorders across the life span.
Psychopathology and affective neuroscience	Impact on clinical practice nationally and internationally (e.g. in autistic spectrum disorders, childhood anxiety disorders, schizophrenia, and postnatal depression). Improving the development of disadvantaged children (including in the developing world).
<p>b. Approach to impact The School provides services and training that are of clear and direct benefit to the public, and research teams work with a range of external partners. These activities promote direct relationships with the users of our research and provide us with understanding of their needs and direct routes to impact. This interaction with clinical and industrial users is facilitated by a wide range of mechanisms (below), underpinned by an impact infrastructure and culture fostered by the School Impact Director, Principal Investigators, the School Director of Enterprise, the School Director of Research, the Heads of Departments and the Head of School. For example, impact is a core agenda item for Staff Development Reviews and staff attend central impact-related training and annual School-wide discussions of impact. The School promotes the impact of its research through six key mechanisms:</p> <p><u>(i) Provision of clinical facilities and clinical liaison.</u> The School, notably, houses two research clinics, both run jointly with Berkshire Healthcare NHS Foundation Trust. The Speech and Language Therapy Clinic has provided a service to local children and adults with speech and language impairment since the 1970s. The Berkshire Child Anxiety Clinic has provided assessment and treatment to children with anxiety disorders since 1998. Fifteen staff currently hold joint appointments between the School and the NHS or Honorary NHS Trust contracts, including three MRC clinical fellows; five local NHS staff have Honorary contracts to work within the School. We also hold an ESRC CASE studentship with the Royal Berkshire NHS Foundation Trust (2010-13). The close relationship with NHS clinicians ensures that our researchers are sensitive to clinical needs and that clinicians and patients access and benefit from the latest research findings. To ensure that the School is well integrated with local health services, we are represented on strategic bodies such as the Thames Valley NHS Local Education Training Board (LETB) and the Oxford Academic Health Science Network (AHSN) (launched in the School in 2013).</p> <p><u>(ii) Provision of clinical training.</u> Since 2008, over 500 mental health professionals have followed postgraduate courses and over 5,700 have attended workshops within the School, delivered primarily by the Charlie Waller Institute (CWI). CWI is jointly operated by the School, the Charlie Waller Memorial Trust and Berkshire Healthcare NHS Foundation Trust to conduct research and deliver training to promote evidence-based treatments for people with mental health difficulties. CWI, therefore, provides a mechanism for our research to have a direct influence on the training of health professionals and clinical practice nationally. Similarly, our research influences training for</p>	

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other health professionals, including health visitors, ophthalmologists, speech and language therapists and clinical psychologists. For example, members of the School regularly teach on clinical training courses and at clinical conferences, publish in clinical texts and provide clinical training placements (e.g. clinical psychology, speech and language therapy). The contribution to clinical practice that our staff have made has been recognised by a number of prestigious awards (Shafran – British Psychological Society (BPS) Award for contribution to professional practice (2010); Creswell – BPS May Davidson award for outstanding contribution to clinical psychology (2010); Horwood – International Orthoptic Association Research Award (2008) for contribution to the profession).

(iii) Promoting joint work with industry. The School has close working relationships with industrial partners which have resulted from our critical bridging role between fundamental science and its application. We have interdisciplinary partnerships spanning, for example, cellular and molecular research through to pre-clinical and human trials. These partnerships have been facilitated by mechanisms that include interdisciplinary research afternoons, faculty-wide research meetings and linking new staff with colleagues from other disciplines. For example, our work with the School of Pharmacy on the anti-epileptic effects of cannabinoids has reached phase one clinical trials in collaboration with GWPharma (since 2008), with funding for phase two trials now agreed. Similarly, work on cocoaflavanols, sponsored by Mars (2008-11), could not have taken place outside this interdisciplinary framework. Here, we have had a critical role in the assessment of behavioural effects, and this line of work has the potential for influencing the development of healthy foods. The mechanisms for collaborating with industry include direct sponsorship of Post-Doctoral Research Assistants (e.g. GWPharma, since 2008, and Pepsico, 2010-12), industry-linked studentships (e.g. Microsoft scholarship, 2011- 2014; CASE studentships, e.g. Unilever, 2009-13; and Britvic, 2011-14) and Knowledge Transfer Partnerships (KTPs). The School has benefited from the University's high level of expertise in KTPs (98% of UoR applications are successful) to gain funding for projects – for example, with Ella's Kitchen (2010-13).

(iv) Promoting public engagement in research. We engage the public in research planning and management – for example, through liaison with the Berkshire Healthcare NHS Foundation Trust Patient and Public Involvement Group – and routinely involve potential beneficiaries on research steering committees. Staff also regularly work with the University's Communications Office to promote public knowledge and understanding of our research (e.g. via the University Public Lecture Series, Café Scientifique, Science Museum workshops and interactions with the media). Members of the School are regularly interviewed for TV, radio and news media (e.g. The Times, BBC's 'How Safe are Britain's Roads' and 'Britain's Favourite Supermarket Foods' (2013), Channel 4's 'The Food Hospital' (2013), BBC Radio 4 Women's Hour (2009, 2012), BBC Breakfast (2010,2013) and regular appearances on BBC Berkshire). On the basis of their research, staff have authored and contributed to books targeted at the general public, patients and practitioners. Researchers (such as those in the child development research group) publish regular newsletters and organise events for the public, health and education professionals and the voluntary sector (e.g., the National (2012) and Berkshire Autistic Societies (2012), the Stroke Association (2011-), and Parkinson's UK (2012-)) to raise awareness of our work.

(v) Promoting worldwide impact. The School encourages research activities that have direct impact internationally, in particular through actively supporting joint grants (e.g. through the Human Frontier Science Program) and studentships (e.g. Felix studentships) in collaboration with international organisations (e.g. the National Centre for Autism, India). Examples of international impact include validation of screening tools for autistic spectrum conditions in Bengali and Hindi (2008-12); a large scale screening study (15,000 children screened) to identify service needs in regions across India in order to promote access to healthcare (2010-); development of assessment and identification of specific language impairment in Malaysia (2009-2012), and development of early interventions for children in South African townships (1997-).

(vi) Influencing policy and practice. The School actively encourages staff membership of key panels and boards to influence policy and practice. Staff have contributed to a large number of policy documents and guidelines, including NICE guidelines (e.g. 2011-13), the Improving Access to Psychological Treatments for Children and Young People initiative (since 2011) and road safety guidelines (throughout the REF period). Staff work jointly with various national and local government agencies, including the House of Lords (2011), HM Treasury (2010-11), DEFRA (2011-), Reading Borough Council (2012), and West Berkshire Local Authority. Four staff and PhD

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students have held fellowships or research placements within government departments during the REF period, including the Home Office, HM Treasury, and DEFRA. Staff also sit on other influential panels currently, including the International Life Sciences Institute (a worldwide organisation that promotes science to improve public health and wellbeing) and the Home Office Science Advisory Committee (which provides independent advice on research that informs strategic delivery and policy development).

c. Strategy and plans Our future impact strategy focusses on developing areas of strength where we have had recent success and expanding into new areas where our research has potential impact. This is supported by a strong commitment at an institutional level to make impact a fundamental part of university strategy, as reflected, for example, in the University's recent submission to the BBSRC's Excellence with Impact competition. The University is developing a range of policies and procedures to maximise impact from research, including: emphasising impact as a criterion for recruitment; introducing training programmes to inform and equip researchers to generate impact from their research; and enhancing central resource to focus on the development of impact. We will exploit these initiatives in the development of our own impact strategy, which includes the following major developments:

(i) Expand joint clinical facilities to promote health impact. We are developing plans to bring all of our clinical activities together into one large, purpose-built University facility, in partnership with the NHS and other organisations. Specifically, we plan to develop an integrated unit to house non-medical clinical activities across the School (Speech and Language Therapy, an expanded child anxiety clinic, CWI, and a new Memory Clinic), and to incorporate other clinical activities from across the University (e.g. Hugh Sinclair Human Nutrition Group, Pharmacy Practice Laboratory). This move will further develop our interdisciplinary partnerships and support three key impact aims: (a) to provide a unique set of research-based clinical services to the Thames Valley area and wider community, (b) to deliver multi-skilled training, in collaboration with the Thames Valley Local Education and Training Board (LETB), (c) to work in collaboration with the NHS and local research networks to generate high quality research that impacts on national and international practice. In parallel with this development, we are currently expanding the clinical remit of the Berkshire Child Anxiety Clinic to become the Berkshire Anxiety and Depression in Youth (AnDY) research unit, extending the client group in terms of the age range and types of presenting problems and increasing the throughput from approximately 300 to over 1000 referrals per year by the end of 2014. Other new developments include: (a) integrating an NHS Memory clinic in to the School, in collaboration with Berkshire Healthcare NHS Trust (in process) to create a third joint NHS-School clinical facility, (b) setting up a unit to provide diagnostic, training and support services for adults with autistic spectrum conditions, and consultation and training to nurseries, schools, universities and businesses, drawing on our clinical and research expertise (from January 2014), and (c) developing a clinical research consortium with the five research intensive universities in Malaysia and the Malaysian Department of Health, and setting up a clinical research facility currently being built within the University of Reading Malaysia Campus for the delivery and evaluation of research-driven clinical interventions with the local community (in development). We are also in on-going discussions with the Malaysian Ministry of Health about country-wide provision of clinical training in therapy for speech, language and mental health difficulties, and the recognition and treatment of common communication and mental health problems.

(ii) Develop interdisciplinary partnerships to promote impact in health and industry. The University's Centre for Integrative Neuroscience and Neurodynamics (CINN), based in our School since 2009, supports research in a number of areas likely to have substantial future impact, including diabetes, stroke, limb amputation, and a range of mental health problems. This work has been possible through interdisciplinary collaborations with colleagues in engineering, mathematics, chemistry, cybernetics and pharmacy. We also anticipate having substantial impact in relation to education, intervention and policy for bilingual children and people with autistic spectrum disorders through two new interdisciplinary initiatives, the Centre for Literacy and Multilingualism (CeLM) and Berkshire Autism Research Network (BARN). For example, CeLM links our researchers with colleagues in Education, English and Modern Languages to provide a forum for improving understanding of multilingual language acquisition, disorders and the cognitive benefits and consequences of multilingualism. This work will provide vital information for parents, education professionals, speech and language therapists and government agencies, ultimately enhancing educational and life opportunities for bilingual children and those with literacy difficulties. A

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charitable arm of CeLM, 'Bilingualism Matters @Reading' will be launched in December 2013 and will include the provision of no-cost information sessions and workshops in schools and nurseries, in the UK and abroad, on raising bilingual children, and weekly consultation slots on campus for parents raising their children in more than one language. We are also developing industry collaborations through a series of interdisciplinary projects that will inform high-level decision making in business (e.g. with Henley Business School), highlight effects of food intake on cognition (with art therapists, the charity Kids Company and Ella's Kitchen) and influence communication about major environmental hazards (as part of a Natural Environment Research Council (NERC) funded consortium with Meteorology and Typography colleagues in collaboration with insurance companies, airlines and the building industry). We plan to build on these successes, promoting new interdisciplinary partnerships with the School. For example, from 2014 we will host three 'showcase' events per year bringing together stakeholders in industry and the NHS, and potential collaborators from other disciplines (e.g. Pharmacy, Biochemistry).

(iii) Increase public engagement to ensure that we: (a) conduct research that is valued by beneficiaries, and (b) are recognised as experts to influence policy/ industry initiatives. We are developing a new advisory board with panel members drawn from industry, the NHS, education, and Local Government that will bring health, education, social welfare and industry professionals into the School and ensure that user needs contribute to our research agenda. Our research showcase conferences will bring clinicians, education and industry professionals in to the School, as we have at recent launch events (for e.g. CeLM and BARN) which included workshops for health and education professionals to change practice based on School research. We also aim to maximise our media profile (e.g. using social media) and increase awareness of our research among the public, practitioners and policy makers. Our Facebook site will be a particularly effective means of sharing our research with a truly global following, currently in excess of 139,000 people. To embed skills in the School, we will require all new staff to attend in-house impact and media training and build impact-promoting activities into post-doctoral appointments to ensure that the next generation of researchers are impact aware and active.

d. Relationship to case studies Our case studies exemplify the success of key elements of our approach to impact and have influenced the School's strategic plans.

(i) Provision of clinical facilities and clinical liaison. Four of the case studies (postnatal depression, child anxiety, infant vision and language assessment) describe our impact on clinical practice. Each study involved active engagement in clinical activities and knowledge exchange with patient groups and service providers. Case study authors include clinically qualified practitioners (Cooper, Creswell, Edwards, Horwood), two of whom currently hold honorary contracts with local NHS Trusts. Notably, the impact described in the 'child anxiety' case study would not have been possible without the provision of the joint NHS-School research clinic. The success of this collaboration has led directly to the key strategy of the expansion of joint NHS-University facilities.

(ii) Provision of clinical training. Four of the case studies also describe training of clinicians influenced by their research. For example, Murray and Cooper provided training to practitioners working with mothers with postnatal depression, and the necessary space and facilities were provided by the School. Our strategy of promoting interdisciplinary partnerships will provide further opportunities for training health and education professionals (e.g. through CeLM and BARN).

(iii) Promoting public engagement in research. All case studies reflect successful engagement with the media to promote findings to the general public. In light of this success, all new staff are now required to attend media training. In two case studies, impact has also been achieved through books published for general and professional audiences (Murray and Creswell).

(v) Promoting worldwide impact. All of the case studies describe active promotion of international impact of the research insights. Of note, the work of Murray and Cooper in South Africa has been adopted by an NGO which has trained local workers to deliver the intervention to over 5,000 women from impoverished communities.

(vi) Influencing policy and practice. The case study research has contributed to the development of health guidelines and policies (e.g. NICE guidelines) and case study authors have directly advised on the development of health guidelines and government policies (e.g. Creswell, McKenna). The extensive media presence of McKenna's work promoted access to policy-making bodies. This success has informed our strategy of increasing public engagement in our research.