Institution: University of Hull

Unit of Assessment: A4: Psychology, Psychiatry and Neuroscience

a. Overview

The Unit's submission comprises Psychology at Hull which engages in both fundamental and applied research within three broad themes: (i) Cognition (ii) Cognitive & Clinical Neuroscience, and (iii) Health and Applied Psychology. Since RAE2008, the Department has maintained and developed core activities within the themes of cognitive psychology and cognitive & clinical neuropsychology. From 2011 we have implemented a strategy of research growth in Health and Applied aspects to psychology which are relevant to the region and to national priorities, and which provides an additional source of research funding. Our aim is to advance the discipline of Psychology theoretically while making an impact locally, nationally and internationally. Our impact focus is guided by the physical and mental health challenges in the city of Hull.

The Unit's research structure can be summarized as follows:

Theme 1. Cognition Sub-groups include cognitive development (memory, language and executive functions in children), learning (causal, temporal and spatial), memory (false, autobiographical, metacognitive processes, future event simulation), and social cognition (adaptation to emotional actions, embodied simulation and facial expression, gaze perception).

Theme 2. Cognitive & Clinical Neuroscience Sub-groups investigate how complex mental functions such as perception, social interactions, language, memory and attention are implemented within the brain, and how these cognitive functions decline with degenerative diseases. Included are groups working on social neuroscience (Asperger's syndrome, autism, pheromones & territorial behaviour), neuropsychological assessment in cognition (in areas such as language, emotion, categorization, space processing, time perception, sleep), and dementia/clinical related research (Alzheimer's disease, dementia diagnosis, OCD).

Theme 3. Health and Applied Psychology Includes groups working on health and wellbeing (addictions, feeding, obesity and eating disorders; pilot services for armed forces veterans with mental health problems), and applied psychology (mental toughness in life skills, education and sport, and educational attainment).

The interests of many individual researchers span themes and sub-groups. Groups working within themes 2 & 3 are supported by the *Centre for Health and Clinical Neuroscience* (CHCN) which comprises purpose built accommodation for patient interview and testing. Research activity includes interdisciplinary interactions within the University more broadly (e.g. Reid's work with Hull York Medical School).

b. Research strategy

Our vision is to make a sustained theoretical contribution to the discipline while strengthening the applied strand to theory-led research. Our strategy is to target applied activities, particularly those which bear on national priorities and are central to deprivation in the city of Hull, while maintaining theoretical research of the highest calibre. The priority areas will be health, education, sport and business in which the department has a strong network of end user contacts:

In the area of Health, The Psychology Department's Centre for Health and Clinical Neuroscience (CHCN) will be the focus of impact. The department is currently in negotiations for funding to reinstitute dementia assessments. Negotiations with the NHS through the Research & Development lead and the Directorate for Mental Health and Learning Disabilities, Hull NHS, resulted in an award towards refurbishment of the CHCN as part of a contract to carry out research into the lack of GP expertise in diagnosing dementia. The CHCN now facilitates Reid's research on obese diabetic patients, including provision of clinical sessions. Nicholls recent award from the Ileostomy Association will investigate the stressors, coping strategies, and emotions experienced by ileostomists. Clough is developing a proposal with the Welsh Government regarding: Smoking Cessation; Weight reduction and weight management – especially overweight pregnant women where there is a significant health hazard; and, Rehabilitation from sports injuries. In Education: In collaboration with educational psychologists in North Yorkshire, Johnston is examining the phonic problems of children who failed the government 'Phonics Check', by administering a more diagnostic phonics check. Clough is piloting work with the MTQ48 in teacher training selection; and working with a local college (Wilberforce) to introduce mental toughening to their GCSE maths teaching. In Sport: The department has worked with local and national rugby teams. Clough is

working with the Polish Winter Olympic team to develop and measure mental toughness. In Business: Clough and colleagues are working with large local businesses, for example Vivergo and Novartis, to enhance their performance.

The impact of research is at the core of many of our research discussions, for example, our research group meetings and away days, the mentoring system; and the peer-review processes. Contacts and externally directed research ideas are coordinated by Clough, the Enterprise Director, to develop an end-user informed research strategy and monitor the impact implications of the departments' research. Evidence of successful interactions with end users is included in the impact case studies. Letters of support and case studies are available, as are media reports. In addition, much of this end user work appears in our applied outputs. The long term nature of many of our contacts is testimony to their success.

The Department will continue to enhance its post-RAE2008 mission of building research potential on a par with the best of its competitor departments in the UK. Progress is principally evidenced by, first, a substantial increase in the number of internationally excellent outputs in this exercise in comparison with RAE2008 from 43% to approximately 80% (estimated in an internal review exercise); and second, by an increase in research income, from an average of ~£94K p.a. during the RAE2008 period compared with ~£248K p.a. in the current assessment period. This progress has been made against a background of changing University strategy and leadership, and replacement of more than 60% of the research active personnel in the Department during the period (i.e. only 8.2 of the 20.7 FTE researchers submitted in RAE2008 are included in the current assessment).

Our original post RAE 2008 research strategy was to continue to develop two main research areas ('Cognition' and 'Cognitive Neuroscience'). This strategy has been modified to take advantage of the changing political and staffing landscape. Consistent with the original strategy, investments in experienced staff with expertise in the areas of cognition and neuroscience (Anderson, Castronovo, Dewhurst, George, Holle, Mather, Nakabayashi, Riggs) have strengthened the research outputs of those groups. However, the departure of key figures in the cognitive neuroscience group, and a delay in the realization of one of the University's strategic developments in the area of imaging, has led to recruitment challenges for that group. The Department's staffing strategy (see below) has been modified to align more closely with the University's new strategic theme of Health, reinforcing its commitment to regional challenges. This has led to the rapid development of the third group, Health and Applied Psychology. Clough's work on Mental Toughness has given renewed impetus to Applied work, while several new appointments have introduced a rapidly developing Health strand. The University has invested in the Department in recruiting experienced staff, and in providing capital and revenue support. Three professorial posts (two health psychologists - Hammersley, Reid; and a cognitive psychologist with a strong applied record - Groeger), and two further health-related lectureships (Dent-Brown and Why) means that we currently operate under three themes ('Cognition', 'Cognitive Neuroscience', and 'Health & Applied), rather than the two reported in RAE2008.

Theme 1. Cognition

In the **Learning group**, *Castronovo* is the first to have studied the impact of high-level mathematics education on core number systems in adults, suggesting that mathematics education has no impact on individuals' approximate sense of number, but helps to acquire better anchored symbolic numerical representations. ***George's*** Royal Society funded research has focused on the effects of uncertainty and ambiguity on attention and learning. His research has shown that the ability to selectively attend to particular dimensions of stimuli depends on the context in which the stimuli are presented. *Wilson*'s EPSRC funded research has investigated whether spatial cues compete for mental resources when locating a goal. Evidence from this research suggests common operations to the mechanisms of causal and spatial learning. In the **Memory group**, ***Anderson's*** ESRC funded research has furthered our understanding of memory as an adaptive process that can help individuals to imagine the future and solve everyday problems, with implications for reducing susceptibility to depression and the perceived beneficial effects of exercise on mood. ***Dewhurst's*** ESRC funded research has highlighted the separate roles of encoding and retrieval processes in the creation of false memories in children and adults. His research has also identified a possible adaptive role for false memories. Dewhurst and Anderson have recently secured an ESRC grant to investigate how the associative processes that give rise to false memories can facilitate the planning of future activities. *Mazzoni* is a leading expert in the

study of false autobiographical memories and the effect of suggestion on memory. Her seminal studies underpin a model that distinguishes between autobiographical memories and autobiographical beliefs. Her British Academy funded research has provided the first demonstration that personal memories about one's past can be false. *Nakabayashi's* ESRC funded project demonstrated how language can influence perceptual processing through shifting visual processing orientation, and identified parameters which dissociate beneficial and detrimental influences of language on visual perception. *Holle's* work in the **Social cognition group** has challenged the traditional view that gestures are distinct from language. His work informs a wide range of beneficiaries, including psychologists, cognitive neuroscientists and parents and carers with an interest in gesture-supported communication. His research on contagious itch was covered in November 2012 by major news outlets around the world. *Jellema's* research, funded by the AHRC, ESF, NWO (host) and the ESRC, has demonstrated that dynamic social cues lead to action anticipation in typically-developed individuals in an involuntary manner, whereas in individuals with autism spectrum disorder these inferences are not automated. His research also demonstrated the use of voluntary, compensatory, mechanisms in autism. *Skarratt's* research examined visuomotor sensitivity to visible and inferred events, indexing the attentional and motoric responses to stimulus information. He has also investigated a joint action effect in which the responses of one person inhibit those of another. *Tipples* has published ESRC funded research that continues to challenge the current orthodoxy that there exist specialised mechanism for processing social stimuli (mainly eye gaze). Also, in a ground-breaking new line of research, he has described the effects of emotion on time perception and the effects of emotion on the brain mechanisms that process time. *Johnston's* work on synthetic phonics in the **Cognitive Development** group has led to long term benefits for children's reading skills compared with the standard analytic phonics approach used until recently in England (see Impact Case 1). She has also found that the approach taken by poor readers to learning new print demonstrates not only a phonological weakness but also a visual strength compared to reading age controls, showing a lack of visual-phonological integration. The synthetic phonics method has also been shown to be very effective for Indian children learn to speak and read English. *Riggs*' ESRC and ESF funded research has shown that there is not one critical development that should be thought of as marking children's ability to engage in counterfactual thought, but rather a sequence of (at least) four developments taking place from early to middle childhood. *Mather's* research into the effects of stimulus novelty on early word learning has provided an alternative perspective on how toddlers can learn new words in the absence of explicit teaching. Her BBSRC-funded research has shown that general, low-level cognitive processes such as habituation and novelty preference can guide toddlers' word learning.

Theme 2. Cognitive Neuroscience

In the **Social Neuroscience group**, *Holle has* used EEG, TMS, and fMRI to investigate neural processes underlying language use and the neurobiology of touch, showing that gesture can disambiguate the processing of syntactic as well as semantic information, and that the superior temporal sulcus is involved in the processing of speech-gesture interactions. *Jellema* has illuminated the role played by the temporal lobe in forming predictive descriptions of others' actions and in coding for basic forms of intentionality. His model of social cognition, which incorporates mirror mechanisms and Theory of Mind, explains how normal individuals understand others' action intentions and also explains deficits in this ability in autism. Funded by the European Science Foundation, the AHRC and the ESRC he has also demonstrated that in autism these deficits in particular occur in the involuntary understanding and generation of anticipatory responses, while voluntary understanding may be intact. *Tipples'* research has shown that violations of expectation from eye-gaze and arrow cues lead to enhanced negative ERPs (N300) and formed a basis for proposing a domain-general mechanism for responding to unexpected events. His research into time perception has shown that the subjective perception of lengthening duration are associated with increased activation in the right supplementary motor area and right inferior frontal gyrus.

Neurological assays of cognition include *George's* research which suggests that different regions of the prefrontal cortex process different aspects of the environment in which learning takes place; this has implications for the study of schizophrenia and the treatment of drug abuse. *Groeger*'s work on the interaction between sleep and cognition has developed from his discovery in 2007, that executive functioning is particularly vulnerable in individual's carrying a long allele VNTR of the Per3 gene; shown that individuals must be homozygous to show the effect (funded by US Air Force); and under sleep pressure, since enforced circadian modulation alone does not

discriminate between executive functioning in homozygous or heterozygous individuals (funded by BBSRC, Dijk - PI, Groeger - CI). *Lavidor* has an international reputation in non-invasive brain stimulation in cognitive neuroscience. Since 2010 she has published over 20 articles in top journals reporting her novel findings using transcranial direct current stimulation (tDCS) to enhance cognitive functions. In particular, her lab established the causal role of the right inferior frontal gyrus in cognitive control, and reported paradigms that improve that faculty including a breakthrough combination of tDCS and cognitive training. The prestigious ERC grant Lavidor received (2008-2012) and many additional competitive research grants acknowledged her achievements. *Large's* findings on the functional properties of brain regions involved in object and face recognition have contributed to the development of a two-part representational model of the lateral and ventro-medial extrastriate regions. Her basic science results have important implications for conceptual difficulties as found in dyslexia and autism. *Anderson's* work in the **Dementia/clinical-related research group,** has explored how memory, future simulation, and problem-solving processes may be implicated in clinical disorders such as depression and Parkinson's disease, and has stimulated funding from ESRC and Parkinson's UK. She is also a member of the PROMS-PD study group investigating mood states in Parkinson's Disease. *Castronovo* has investigated the effects of early and congenital blindness on numerical cognition. Her research has shown that early visual deprivation can lead to a general enhancement in numerical estimation abilities, possibly as a result of enhanced working memory processes. *Schindler's* TMS research challenged the assumption that visual search behaviour is primarily a function of the parietal cortex, suggesting that both the parietal- and temporal lobes are differentially involved in visual search depending on specific task demands. These results provide an explanation for neurological patients showing unexpected search deficits after temporal lobe damage. His work with brain damaged patients suggests that the dorsal/ventral visual processing streams are specifically associated with near/far space computation. These findings are a critical step towards expanding Milner and Goodale's model of dual processing streams for visual information in the brain.

Theme 3. Health and Applied Psychology

Dent-Brown's work in the newly established **Health and wellbeing group**, looking at the first independent evaluation of the nationally important Improving Access to Psychological Therapies (IAPT) programme and of pilot services for armed forces veterans with mental health problems, have influenced the roll-out of these schemes. The IAPT work has developed into extensions to services for Long-Term Conditions and Medically Unexplained Symptoms (LTC/MUS). *Hammersley's* work (returned with another UoA) on the ingestion of drugs, food and alcohol has led to a new theory of transient mood and how the mood effects of substances are mediated by cognition, as well as an enhanced understanding of how problem drug use develops and recovers across the life course, which has influenced the Scottish Government's 2008 Drugs Policy, and which in turn led to a Big Lottery Fund research grant with Scottish Drugs Forum resulting in a major SDF report (ISBN 978-1-903483-10-7). *Mazzoni's* work on the nocebo effect (inert substances that cause ill-health through suggestion) has received media attention. Her studies on the role of information, expectancy and modelling in Mass Psychogenic Illness were the topic of a feature article in The New Scientist, and a TV documentary (Superquark). *Reid's* BBSRC and industry funded research has shown that when sucrose is given under blind conditions it does not appear to have significant effects on appetite or mood, so the commonly believed adverse effects of sucrose is most likely due to cognitive expectancy effects. Her work on people with eating disorders' perspectives on their condition has developed the centrality of issues of control in these disorders and introduced the concept of the anorexic voice that is experienced as a semi-autonomous part of the self that is both a friend and a controlling enemy. *Why*'s work on non-veridical appraisals (e.g., body image distortions) has contributed to the emerging evidence suggesting that, while many non-veridical appraisals (e.g., positive illusions) have negative health consequences, some might contribute to effective stress coping by attenuating cardiovascular stress arousal and motivating individuals to persist in an active engagement with the stressor.

In the **Applied psychology group**, *Clough* is one of the leaders in research into mental toughness and its application. His model and measurement instrument are currently the most commonly employed world-wide. He has many international links with academic institutions across the world, perhaps most notably with the Mental Toughness Research Centre in Dubai. The work has recently attracted KTP funding to enable the development of a young persons' measurement

tool. *Groeger's* Science Foundation Ireland Grant research has shown that individual's carrying a long allele VNTR of the Per3 gene polymorphism discriminated between dangerous driving in sleep deprived, early morning drivers (to be presented APSS Baltimore 2013). *Johnston's* work on synthetic phonics, as noted above, has led to long term benefits for children's reading skills compared with the standard analytic phonics approach used until recently in England. *Nicholls* is a leading sport psychology researcher on stress and coping in sport. His research has identified the stressors encountered by elite athletes, what they do to manage such stressors, and how effective coping strategy are. He has also developed a model that includes stress appraisals, emotions, coping, and subjective performance in sport.

Future directions, international collaborations, national priorities: As noted above, recent investment by the University in the department's Health & Applied theme is in recognition of the pressing regional health challenges, and the remit of the Department of Psychology's CHCN has been expanded to respond to Health challenges in addition to its original cognitive neuroscience remit. Our approach remains eclectic, however: Within the University we collaborate with the Dept. of Sports, Health and Exercise Science, Dept. Law and Dept. Sociology. Jellema's autism research focuses on action anticipation/understanding, is inherently multidisciplinary, involving at least three distinct disciplines: Psychology, Neuroscience and Philosophy. More widely, Anderson has recently established collaboration with Dr Inga Liepelt and Prof. Daniela Berg at the University of Tuebingen into the cognitive aspects of Parkinson's disease.

Much of the Department's research supports national priorities: For example, Anderson's work on Parkinson's disease was in line with Parkinson's UK's research strategy which included 'improving the life of people with Parkinson's, also in line with the RCUK's research priority 'lifelong health and wellbeing'. Lavidor's work on cognitive enhancement fits the national priority of ageing and cognitive decline. Mazzoni's Wellcome application with an Arts department is to study memory and social intervention with socially disadvantaged youth. Holle has started a collaboration with the Faculty of Arts and Social Sciences on skin health and is applying for external funding from the Psoriasis and Psoriatic Athritis Alliance.

c. People, including:

i. Staffing strategy and staff development

Over the REF period we have maintained strict assessment criteria when recruiting academic staff: They need to demonstrate research excellence (the ability to produce 3* output), including a track record (or potential) to obtain grant income, and be student-oriented, with a desire to convey research-led teaching on UG and PG courses (the latter to focus on three new PG taught courses in 2013). This runs in tandem with the University's research investment strategy which is designed to ensure all existing staff members obtain research excellence. We have addressed the imbalance between too few senior staff and an otherwise largely early-career staff at the outset of the period: for example, in RAE2008 only 4 professors were in post, compared to 6 (plus one emeritus professor, Kirsch) in the current exercise period. The University now has a promotion policy, coupled with clear key criteria which should reduce former challenges associated with staff retention. We are developing a workload model to ensure that individual contributions are valued and equitable, with research achievements rewarded. Staff mentoring and appraisal provides development opportunities for all (facilitated by the increase in senior staff who can provide support); these run alongside informal support mechanisms. Therefore, in line with the Concordat to Support the Career Development of Researchers, the Unit recognises the importance of recruiting, selecting and retaining researchers with the highest potential to achieve excellence in research, ensures that researchers are recognised and valued, promotes personal and career development, and lifelong learning, and promotes diversity and equality. Half (49%) of academic staff are women, with men and women represented on all committees (Departmental Research Committee; LTAC, Staff-Student). The Department is currently under the leadership of its first woman HoD: Prof Marie Reid. The University is committed to equal opportunities and is currently working towards the Athena SWAN Bronze award which is based on a charter for Women in Science with Reid taking the lead for Psychology. Approximately 30% of academic staff in the Department were non-UK citizens originally.

The Unit supports early career researchers by providing mentoring, grant workshops, specialised laboratory facilities (e.g., £12K for an 'infant laboratory' for Mather), equipment (e.g. EMG/EEG, tDCS), participant payments etc., and underwrites external applications for conference attendance to disseminate research.

ii Research students

The department offers research doctorates, professional doctorate programmes and MREs/MSc programmes. There are currently 26 research students (17 PhDs and 9 MRes/MSc students) and approx 25 clinical doctorate students. Since 2008, 31 research students (19 PhDs and 12 MRes/MSCs) and 31 clinical doctorate students were successfully supervised to completion. Twenty seven research students graduated within the prescribed study period. However, four PhD students and one MRes (16%) discontinued their studies. Thirteen of our PhDs continued their career in other academic institutions either as lecturers or post-doctoral researchers.
Students in the research doctorate and MRes/MSc programmes have been part of a thriving research environment comprising many early career staff with varied research and ethnic backgrounds which has produced a very dynamic and diverse environment with clear relevance to postgraduates. The close link between staff and students in the department has been recognized by a number of teaching awards and positive ratings which have helped produce a true research community. Students on the professional doctorate programme have further enriched the PG community, as their work links theoretical frameworks to real life clinical problems and strengthens a translational culture. They also facilitate exchanges with NHS providers and health professionals and maintain the important interaction between academic researchers and clinical staff.
Research doctorates have been funded by EPSRC, EU, AHRC and Novartis Foundation. Professional doctorates in clinical psychology were funded by the NHS.
The department allocates funds in support of research students for participant reimbursement, equipment and travel funds for national and international conferences. All research students are invited to present their work regularly at the departmental internal research seminars and at an annual poster session. Over the REF period our PhD and master students published 36 articles in peer-reviewed journals, 3 book chapters, presented at 76 national/international conferences, and their work won local and international awards. Since 2008 research students have been awarded with 12 travel grants for presenting at conferences totalling £7,500.

Research student recruitment should benefit from 3 new taught masters courses because it is anticipated that some PG taught students will continue onto research degrees at Hull.

d. Income, infrastructure and facilities

Research income totalled £1.24 M during the period which is an increase from an average of ~£94K p.a. during the RAE2008 period to ~£248K p.a. in the current assessment period. Of the total, 28% was received from 'BIS research Councils, Royal Society, BA, & The Royal Society of Edinburgh', 29% from EU government bodies, and 20% from UK Charities-Open Competition, with 14% from other sources.

The Cognitive & Clinical Neuroscience and Health & Applied research themes are supported by the CHCN facility. First established in 2004 to link cognitive neuroscience with the local NHS to address local health concerns, the CHCN has been developed to provide a gateway between clinically relevant research and local services. Recent activities include screening for early onset of dementias, work on feeding and eating disorders, including lifestyle and obesity amongst people with intellectual disabilities, research to design evidence-based incentive schemes for diabetic patients, and the use of smartphone apps to monitor alcohol-induced impairment in situ and promote safer drinking. Recent contact with the local R&D lead has led to an award that we consider will be the first step into National Institute for Health Research funding. We are currently in negotiations for funding to carry out dementia assessments.

The Department is well-resourced, with a dedicated neuroimaging analysis lab and MRI simulator, a Neuromodulation lab with 2 Magstim Rapid TMS stimulators and 2 tDCS stimulators including Neuronavigation facilities for fMRI guided brain stimulation, a 128 channel ERP lab, two high frequency eye-tracking systems (Eyelink, SMI), and excellent psychophysical and psychophysiological recording facilities, housed in a newly refurbished building. In addition the Department recently set-up a state of the art sleep laboratory for research into sleep deprivation. There is also access to excellent 3T MRI imaging facilities through established links with the University supported MRI centre and direct patient access through the associated Centre for Health and Clinical Neuroscience.

e. Collaboration or contribution to the discipline or research base

The department provides financial support for collaborative work with other institutions, for example, spending time in other laboratories. We have active internal and external seminar

systems. Staff are actively encouraged to engage with end users – through financial support, workload adjustments and other mechanisms – as demonstrated by Johnston, Clough and others. We encourage and financially support conference attendance, and have hosted international conferences: For example, in November, 2010, the Department hosted an international Workshop on Metacognition; In April 2012, the Department hosted a meeting of the Experimental Psychology Society. Individual contributions include:

Professors:

Groeger: BPS Fellowship 2009; Editor Transportation Research: Traffic Psychology & Behaviour; 1998-2011; Reviewer for NeuroImage and others; Adjunct/Visiting Professorships at University of Surrey, 2008- and University College Cork, 2013-; Advisor for UK Department of Transport (2000-2008) and Road Safety Authority of Ireland (2009-).

Hammersley: Editorial board of *Addiction* and *Addiction Research & Theory*; Grant reviewer for ESRC, NIHR, MRC and Alcohol Research UK; Reviewer for *Addiction* and others

Johnston: MBE for services to Education; Collaboration with Pearson publishers to produce an in-service phonics training course; Invited seminar in Faculty of Education, Edith Cowan University, Perth, Australia; Member of six Department for Education committees overseeing effective implementation of synthetic phonics teaching in primary schools in England; Reviewer for *Cognition*

Mazzoni Advisor, Italian Supreme Court and Italian Attorney's National Guild; member of the International Programme Committee for the European/American Psychology and Law Society; Organizer and chair, International Workshop on Metacognition, Hull, Nov 2010; Grant reviewer for MRC, and ESRC, Social Sciences and Humanities Research Council of Canada, Israeli Science Foundation, and others; Research featured in TV documentaries on BBC2, Channel 4, Discovery Channel and Radio broadcasts (on BBC Today, BBC Woman's Hour and others); Feature articles in New Scientist and Sunday Times; Editorial Board of *Psychology of Consciousness: Theory, Research, and Practice* (starting April 2013).

Reid Editorial board of *Nutrition Bulletin*; Steering Committee for NHS Scotland Child Healthy Weight programme; Nutrition Society public engagement team; Grant reviewer for ESRC, BBSRC, MRC, NIHR

Wilson Member of the International Programme Committee for The European Conference(s) on Disability, Virtual Reality and Associated Technologies, 2008, 2010, 2012; Reviewer for *JEP:LMC* and others; rapporteur for ESRC and reviewer for BBSRC; PhD examiner, Flinders University, Adelaide.

Readers and Senior Lecturers

Clough Academic advisor for Merseyside Education Authority; Safety advisor for Novartis; Reviewer for Sport, Exercise, and Performance Psychology and others; PhD examiner Teeside University; Invited Speaker, Coaching Meeting, University of Kansas, 2012 and others; Keynote speaker for inaugural meeting of the World Centre for Mental Toughness, Dubai, 2011; Psychology lead for Great Britain Rugby League development region squad.

Dewhurst Associate editor of *Memory* and editorial boards of *Journal of Cognition & Development* and *Psychologia*; Reviewer for *JEP:General* and others; Grant reviewer for ESRC, Leverhulme, US National Science Foundation, and Social Sciences and Humanities Research Council of Canada; PhD examiner for Leeds, Keele, and Manitoba

George Editorial board of *QJEP* (2005-9); Reviewer for *JEP:Animal* and others; Grant reviewer for BBSRC; Local organiser EPS Meeting, April 2012.

Jellema Reviewer for Journal of Cognitive Neuroscience and others; Grant reviewer for ESRC, NSF, Leuven University; Member of CNCC-ESF Scientific Committee; PhD examiner Birkbeck, Utrecht. Invited talks at EPS and SEPEX conference, Granada (2010), Joint Face Meeting, St. Andrews (2008).

Lavidor Editorial board *Brain Stimulation*, *Psicoligica*, and *Frontiers in Neuroprosthetics*; Reviewer for *Current Biology* and others; Grant reviewer for BBSRC, MRC, ESRC, Royal Society, Wellcome, Narsad; Invited talks at Brain Stimulation Meeting, Goettingen 2008 and TMS Summer School, Oxford 2010, 2012

Riggs ESRC peer review college (2008-2010); Editorial board of *L'Annee Psychologique* and *Topics in Cognitive Psychology*; Grant reviewer and rapporteur for ESRC, Leverhulme, and Israeli Science Foundation; PhD examiner for Birkbeck, Birmingham, Belfast

Lecturers

Anderson Reviewer for Journal of Neurology, Neurosurgery & Psychiatry and others; Grant reviewer for ESRC; Interview included in New Scientist article (October 2012); Organised symposium Memory and future thinking, 5th International Conference on Memory, York 2011.

Castronovo Grant reviewer for Leverhulme and FNRS; Reviewer for *Cortex* and others.

Dent-Brown Invited seminar leader for the Portuguese CBT association, Lisbon 2012; journal reviewer for Counselling and Psychotherapy Research, The Arts in Psychotherapy etc; one PhD student under supervision on NIHR-funded doctoral Fellowship; one PhD completed joint degree (Sheffield/Lisbon Universities) on Portuguese National Science Foundation Fellowship.

Holle Best Clinical Research Paper Award at the World Congress of Itch 2013, Young Investigator Award German Society for Psychophysiology and its Applications 2008; Reviewer for *Journal of Neuroscience* and others; Grant reviewer for ERC and British Skin Foundation; Invited talk at German Linguistics Meeting, Potsdam, 2013.

Large Reviewer for Journal of *Cognitive Neuroscience* and others; Grant reviewer for BBSRC; PhD examiner Bangor University and University of York

Mather Rapporteur for ESRC; Member of BPS Developmental Section Committee; Reviewer for *Developmental Psychology* and others

Nakabayashi ESRC peer review college; Reviewer for *JEP:LMC* and others

Nicholls Editorial board of *International Journal of Sport Psychology*; Psychology lead for Embed the Pathway Programme (Rugby Football League); Research cited in *Psychologies* (October 2011); PhD examiner Loughborough University

Schindler Reviewer for *Trend in Cognitive Sciences* and others; Grant reviewer for MRC, Royal Society, and Wellcome; Invited talks EBBS Rhodes 2009, European Neuropsychological Societies Basel 2011

Skarratt Reviewer for Journal of Experimental Psychology: Human Perception & Performance, Cognition, Psychological Science, and others; rapporteur for ESRC.

Tipples Associate editor for *Visual Cognition* and consulting editor for *Attention, Perception & Psychophysics*; ESRC peer review college and rapporteur for ESRC; Reviewer for *JEP:HPP* and others; Research cited in *Wall Street Journal* (April 2011) consulting editor for Journal of Experimental Psychology: Human Perception and Performance JEPHPP.

Why Reviewer for Psychosomatic Medicine, Annals of Behavioural Medicine, Journal of Behavioural Medicine, and many others; Grant reviewer for ESRC; Reviewer for conference submissions to American Psychosomatic Society conferences in 2009, 2010, 2012, and to the International Psychological Applications Conference and Trends in 2012 (InPACT; Lisbon, Portugal); Consultant to the development of an online Adobe Flash game 'Shadow Shoppe' for Singapore-MIT Gambit Game Lab (http://gambit.mit.edu/loadgame/shadowshoppe.php) to examine the association between personality judgments and body shapes.