Environment template (REF5)

Institution: University of Sheffield
Unit of Assessment: 28B - Modern Languages and Linguistics: Linguistics

a. Overview

The seven staff within this unit are members of the Department of Human Communication Sciences (HCS). Researchers at HCS are grouped in clusters which include PhD students and academic speech and language therapy (SLT) staff not returned for REF, e.g. university teachers, who make an important contribution to ensuring the relevance and impact of our research. The staff being submitted to UoA 28, together with Emeritus Professor Mick Perkins who retired in 2010, are primarily affiliated to the *Clinical and Interactional Linguistics* cluster. We carry out phonetic, psycholinguistic and interactional linguistic research in relation to a range of populations. These include: children with developmental speech, language and communication difficulties (Howard, Stackhouse, Wells) and autistic spectrum disorders (Muskett, Perkins); adults with difficulties arising from stroke or traumatic brain injury, including aphasia (Wilkinson) and dysarthria (Cunningham, Rutter, Wilkinson). In addition, phonetic and linguistic research is conducted with typically developing children (Rutter, Wells, Wilkinson) and typical adult speakers of English and other languages (Howard, Wells).

HCS has a record of sustained achievement in research dedicated to the process of understanding human communication systems. It has delivered linguistically, socially and psychologically informed frameworks of speech and language function. We are equally committed to the translation of these findings into means of helping people with communication difficulties. Continued growth in knowledge exchange has increased the flow of research ideas to policy development in SLT and education. HCS is well positioned to expand application of this work to improve the lives of people with communication difficulties.

b. Research strategy

Our main strategic goals have not changed fundamentally since RA2008:

- *To sustain and encourage the interdisciplinary diversity which has proved a valuable catalyst for much of our research*

- *To prioritize the relevance of theory to practice, ensuring the impact of research on end users*

- *To maintain our pre-eminent position in, and contribution to, the discipline of clinical linguistics and phonetics*

These overarching aims have been achieved by the following agreed strategic approaches:

- *To enhance research capacity through recruitment of new staff*

This is evidenced by the fact that, among the staff returned to UoA 28, there are two early career researchers appointed since RAE 2008: Muskett, a speech and language therapist with qualifications in psychology and computer science; and Rutter, a clinical phonetician / linguist. Both enhance our focus on social interaction, integrating basic research with clinical applications in relation to adults (acquired dysarthria) and children (autism). In 2012 this interactional focus was further strengthened by a professorial appointment: Wilkinson, dually qualified in speech and language therapy and linguistics, who is internationally regarded as the leading exponent of Conversation Analysis in relation to people with aphasia.

- *To identify and exploit new common ground within and between HCS research clusters and with outside collaborators*

An example of this approach is the VIVOCA2 (Voice Input Voice Output Communication Aid) project, which aims to produce a device which will assist spoken communication for people with severe dysarthria. It is a collaboration between Cunningham, a computational speech scientist at HCS, other university researchers, NHS and industrial partners (see REF 3a). Cunningham has been seconded part-time by HCS to the University's School of Health and Related Research to take such collaborative projects forward. This has led to the establishing of a University-wide Centre for Assistive Technology and Digital Healthcare, which focuses on augmentative communication support. In this way HCS and the University have supported engagement with

external collaborators as well as interdisciplinary research within the University.

Vision for the future

In the area of *acquired communication disorders,* we will extend the approach of interaction-focused intervention that has worked successfully for aphasia to clients with dysarthria (motor speech disorders) and their significant others (Wilkinson, Rutter). An important objective is to establish a dysarthria research clinic, a natural development from the long-standing student-training dysarthria clinic that is held in the department each week. This will link to research into technological support for people with dysarthria (Cunningham, see above). Equally important will be research in real world contexts, applying the principles of interaction-focused intervention with professional health care workers e.g. nurses and allied health professionals (occupational therapists and physiotherapists) who work with people with strokes, to improve the care of these clients in the acute stages (Wilkinson).

In the area of *developmental (child) communication disorders*, the well-established focus on speech difficulties will be further enhanced. Phonetic and phonological investigations of cleft palate speech (Howard) both in English and also in languages where cleft speech has been much less studied, will follow naturally from the interests of postgraduate students attracted by Sheffield's unique reputation in this field (PhDs recently completed / in progress on Amharic, Saudi Arabic, Farsi). Psycholinguistic investigation of children's speech difficulties, within clinical and naturalistic contexts, will continue to be a major element of the research and impact strategy. Stackhouse and Wells will apply this approach to individual children with a range of difficulties (e.g. dyspraxia, Down Syndrome, specific speech / language impairment) in relation to the impact of such difficulties on the child's ability to learn to spell and read. Stackhouse is also a key figure in the long-standing HCS research programme on language and social disadvantage, in collaboration with other HCS staff and colleagues working in schools and in the youth justice system in South Yorkshire (see impact case study: 'Widening opportunities for socially disadvantaged children through language and literacy support').

From a theoretical perspective, we are committed to the refinement and reorientation of linguistic research in a way that is cognisant of the realities of situated language use – an approach sometimes called *interactional linguistics*. Wells will extend his work with Brown (Computer Science) that explores new methods for combining acoustic phonetic with interactional analysis, making use of large corpora of natural spoken interaction in English and other languages. This feeds into an interactionally-grounded account of intonation function and its development in children. A similar perspective informs the work Muskett on interactions involving children with autism, revealing the importance of basing clinical decisions on observation and analysis of the client's naturally occurring talk-in-interaction. Howard, Rutter and Wilkinson also share this interactional clinical linguistic approach. It will be a priority to broaden the range of academic beneficiaries of our research beyond speech and language therapy and clinical linguistics. Target disciplines include: childhood studies; medical sociology; education; disability studies; as well as more 'mainstream' phonetics and linguistics. In parallel, novel multimedia approaches to engagement of and dissemination to non-academic beneficiaries will be fostered through use of social media.

The outcomes of these research programmes will provide the basis to create new funding streams and support expansion of PGR provision. Applications to AHRC (linguistic research), ESRC (social and educational research) and EPSRC/MRC (technically based assessment and treatment tools, as well as speech-driven environmental control technologies) will be developed to consolidate and expand the research areas above, with support from the Faculty's RCUK strategic priority alignment initiative. Work involving speech and language therapy will shape applications through NIHR. Mechanisms in place to realise these plans include participation in Faculty-supported "red lining" weeks to prepare grant proposals and departmental away days with research and research funding focus for staff, RAs and PGRs.

Commitment to impact is an integral strand of research development plans in HCS. Work to date has generated products and procedures that have benefitted people with communication disorders

and their families, as well as professionals in education and allied health. There remains enormous scope in terms of research development and funding applications in these areas, which is driven by shortfalls in health and education provision for people living with long term communication disorders. More targeted and cost-efficient means of supporting children and adults with speech, language and literacy disorders are required. Thus, staff will prioritize developments in research to address these needs.

Our achievements since 2008 and our vision for the future are underpinned by robust institutional support. In 2008 HCS became a founding department of the new Faculty of Medicine, Dentistry and Health. The Faculty research leadership structure includes a Director of Research and Innovation and a Committee (FRIC) which comprises all departmental Directors of Research, a Faculty PGR Director and key support staff. FRIC is responsible for the strategic direction of Faculty research via shared resources, expertise and policies and pump-primes strategically important research. A recent development is the introduction of two Red Lining Weeks each year to create opportunities for reading, writing and research collaborations. Resources include the Sheffield Healthcare Gateway as an access point for business to our facilities and expertise to maximise user involvement and research income. HCS has a Research Committee responsible for strategic oversight, governance, management of core facilities, disbursement of research budgets and oversight of PGRs. The Committee is chaired by the Director of Research, who represents research interests on the HCS Management Group *ex officio* and on the FRIC. It includes as members Head of Department, PGR tutor, Chair of the HCS Ethics Review Panel, the lead member from each research cluster, and research assistant and PGR representatives. In addition to committee meetings, away days on research topics occur regularly. Recent events included sessions ranging from creating and reporting impact, setting research strategy, research ethics reviewing and effective research costing. The individual research clusters support a range of research activities for staff, RAs and PGRs. These include meetings which may involve discussion of recent articles, dry runs of conference presentations, feedback on grant applications or work in progress, as well as hosting invited speakers for the departmental research seminar programme.

c. People, including:

i. Staffing strategy and staff development

Since RAE 2008, HCS has demonstrated a commitment to the employment of ECRs into lecturing positions created via retirements, resignations and new investments, while maintaining leadership capacity through an appointment at professorial level (see (b) above). All academic appointments must meet UoS requirements for research achievement, which is assured by the Faculty Director of Research and Innovation. The case for each appointment must link explicitly to Department strategy and infrastructure. Since 2008, internal promotions include a personal chair (Howard), reflecting the University's commitment to growing its own research leaders. New appointments of ECRs to lectureships (Muskett, Rutter) and of Wilkinson to a chair have already been mentioned. ECRs are encouraged to take on the second supervisor role for PhD students in order to gain experience by working with a senior colleague. Close mentoring of new staff, for example in preparing grant applications, is available from senior colleagues and from professional services staff. Staff development and career progression is supported by a probationary programme, which involves setting research aims and regular reviews by Heads of Academic Unit and the Faculty Pro-Vice Chancellor. New lecturers participate in the University *Certificate in Learning and Teaching* which includes training in research and supervisory skills.

The University was awarded the *HR Excellence in Research* award from the European Commission in 2012 and we are committed to applying the seven principles of the *UK Concordat for the Career Development of Researcher*s. Our ECR academic staff are given reduced teaching loads and assigned a mentor who takes an active interest in their research**.** Our ECRs access the University's 'Think Ahead' framework of support (cognate-discipline tailored induction; professional development programme equipping ECRs with transferable skills; suite of career support; tailored mentoring to inculcate independence amongst junior researchers). Highlights include grant writing and in house poster workshops. Many events within Think Ahead facilitate networking across disciplines; events geared to this include the *Crucible*, *GradSchool* and *Researcher Mentoring.*

The University's Crucible programme, a flagship initiative within Think Ahead's professional development programme, targets professional development in interdisciplinary working, innovation and collaboration to offer a cross-disciplinary environment to increase serendipitous collaborations and to highlight a wide view of research and its power to influence society. Vital but less formal staff development takes place within research clusters, where new projects can be nurtured, for example by informal feedback on grant applications at an early stage. ECRs are represented on the HCS Research Committee.

The sustained impact of the research conducted by HCS staff on professional practice and policy (see UoA 5a) has been matched by the reciprocal impact of practitioner and user experience on HCS staff in shaping HCS research direction. This interaction is evident locally (Sheffield / South Yorkshire /North Derbyshire) and nationally (England), as illustrated in the impact case study "Widening opportunities for socially disadvantaged children through language and literacy support". It is also evident at UK and international levels, as illustrated by the impact case study "Children's speech and literacy difficulties: influencing professional practice". Working relationships have been established through academic staff involvement with services in an advisory capacity, through provision of in-service training, shared supervision of student placements and the contribution of practising SLTs and teachers to undergraduate and postgraduate teaching. This has meant that all academic staff, not just those being returned for REF 2014, have been involved in creating and delivering the impact of HCS research.

University, faculty and department are committed to equal opportunities and diversity. This is evidenced by the promotion of women to senior appointments: in HCS 4/6 professors and 5/6 readers / senior lecturers are women. HCS has established a Gender Diversity and Equality workgroup, which aims to establish equality of aspiration and achievement for staff and students of all genders. In reflection of HCS's activities in this area, this group received the Bronze Departmental Athena Swan award in September 2013. One recent example of support is a postdoc researcher on a fixed term contract who had periods of maternity and extended health leave funded by the University, while temporary halting of the project was approved by the research council involved (AHRC).This enabled the project to be completed successfully and the postdoc to maintain her career development despite the interruptions.

Staff take part in the University's Staff Review and Development Scheme (SRDS). The process involves target setting for research outputs, grant income and PGR supervision, review of progress and the identification of development needs. SRDS reviews feed into a wide range of staff development opportunities for academic and research staff such as specific training in PhD supervision, the grant application process and management of postdoctoral researchers. HCS study leave policy allows staff research study leave back-filled by university teachers and assistants. The HCS workload model provides for research-active staff to take one day per week for research during the teaching semester. Professorial leads and the Director of Research foster staff research development in individual meetings to discuss plans and at staff seminars and informal group meetings to disseminate findings or meet research visitors. The Research Committee oversees a modest research stimulation fund (mainly used to pump-prime new collaborations through supporting travel costs), as well as a generous conference attendance fund, to which all staff and PGRs may apply.

Amongst the Russell Group the University is a leader in fostering good research practices (GRP), recognising that excellence requires intellect and integrity and that research environments must be underpinned by cultures of integrity. Sheffield is the only Russell Group university to deliver compulsory GRP training for all its research students (who receive training that is tailored to cognate-disciplines). The department abides by the University's 'Good Research and Innovation Practices' Policy and, with regards research involving human participants, personal data or human tissue, the department abides by the University's 'Ethics Policy' when managing the Ethics Review Procedure. The department runs its own Research Ethics Committee (REC) which is a devolved unit of the University's (UREC). Records of research ethics reviews are audited annually by the University. Among the HCS staff who serve as reviewers for the Departmental REC is the joint author of the first book-length treatment of ethics in speech and language therapy, published in

2009. Staff have access to training opportunities through UREC; HCS has organised additional training events and discussion groups on topics such as reviewing student project ethics. The DoR and Chair of the Departmental REC regularly disseminate policy updates.

ii. Research students

Full-time and part-time PGR students and postdoctoral researchers play a vital part in the research culture of HCS, supporting the research and impact strategies. The seven staff in this unit currently supervise 28 individual PGRs registered in HCS (21 as lead supervisor), including four EU students and six international students, the latter all working on their home languages. Topics relate to developmental and acquired speech, language and literacy difficulties. In line with our strategic aim, the methodologies are diverse, including for example phonetic studies of cleft palate speech, development of computer-based assistive technologies for adults with dysarthria and interactional research involving adults and children with communication impairments.

The University's *Research Student Proposition*, published in 2012 and against which all departments benchmark themselves, outlines what research students can expect from Sheffield and what Sheffield expects in return. In its institutional review of December 2012 the QAA had no criticisms, highlighting aspects of Sheffield's provision for research students as good practice. This marked significant progress on the previous audit in 2008 when aspects of the University's QA processes for research student provision were criticised. QA is now embedded and consists of an annual review (in which research students themselves contribute their perspectives on the quality of provision), a thematic review and biennial survey.

In line with University good practice, HCS maintains robust policies for selection, monitoring and support. All funded PhD opportunities are advertised nationally; shortlisted candidates are interviewed by two potential supervisors and the postgraduate tutor. Student progress is monitored monthly via supervision reports and assessed bi-annually using Faculty-driven processes, with the confirmation / upgrade process at the end of the first year (full-time). Open meetings with PGR Tutors are held three times a year, which all PGR students attend. PGR study is flexible, with remote location and part-time modes enabling completion without attending full-time. Distance learning offers opportunities to individuals who would be otherwise unable to attend full-time due to personal circumstances. Several HCS distance learning masters students have made the transition to part-time PGR study following individualised support provided by staff: four current female PhD students took this route.

During the course of their studies, each PhD student is actively encouraged to collaborate with supervisors in preparing results for conference presentations. Every year the student presents a research paper at a departmental mini-conference attended by all research supervisors and PGRs, with prizes awarded for the best presentations. Collaborative publications arising from the student's research are routinely prepared in the course of the student's studies as well as post-submission. Each student belongs to a research cluster, participating in the cluster's meetings, journal clubs, data sessions etc. and is expected to make a pre-viva presentation to cluster members.

In line with the 'Research Student Proposition*', research students can expect to be treated as professional colleagues and members of an intellectually stimulating community of scholars. All new PhD students receive a thorough induction with different complementary elements covered at University, Faculty and department level; this was commended by the QAA. PhD students receive extensive training through the Doctoral Development Programme (DDP), which the QAA noted positively. The DDP is a flexible, ongoing programme of training wherein PhD students receive support based on an initial Training Needs Assessment. The DDP enables students to demonstrate generic skills to become a high-level professional; and gain subject-specific advanced training, subject-specific craft skills and broad scholarship / wider engagement with the community of scholars. The DDP is monitored and recorded in an e-Portfolio. A wide range of more specific research training modules are available, taken from the taught masters programmes in HCS (Speech Difficulties; Speech and Cleft Palate Studies; Language and Communication Impairments in Children; Human Communication Sciences). Most PGR students take one or more of these modules, following their training needs analysis. All the material is available to part-time students on the University's on-line learning system (MOLE). PhD students whose research involves data

from people with speech or language impairments are provided with opportunities to meet with relevant clients in a variety of clinical and other settings. Students will have training within their research group on the acquisition and analysis of data. Finally, PGR students have the opportunity to teach HCS undergraduate or PGT students, for example by giving a lecture on their research or through tutorial teaching, for which training is provided.

HCS is part of the ESRC White Rose Doctoral Training Programme in Social Sciences, offering specialist modules in clinical linguistics and related topics. Two ESRC-funded students have obtained PhDs in the REF period, including a CASE studentship held with Dawn House School, a charity funded special school for children with communication needs. HCS funds around a third of its PhD students through an annual competition for university and faculty studentships and fee scholarships, as well as department-sponsored Teaching Assistantships. Most overseas PhD students are funded by their government or university, while many of the part-time PhD students are SLTs employed by the NHS, other universities or charities. Since 2008, twelve students with the primary supervisor from this research group (Howard, Stackhouse, Wells, Perkins) have successfully completed their PhD, following which six took up lectureships.

d. Income, infrastructure and facilities

Research is funded from a range of external sources (£408.4k in total to this group). Examples include: project grants (AHRC: Wells, with Brown, Computer Science; EPSRC, NIHR: Cunningham); fellowships (ESRC: Howard); PhD studentships (ESRC); as well as charities such as ICAN (Stackhouse). Howard and Wells were senior scientists on the EU-funded Marie Curie training network 'Sound to Sense' (2008-12), involved in PhD supervision with colleagues in Sheffield and York. There is a faculty scheme for pump priming funds of up to £20K for new research projects leading to future grant capture, from which two of the returned staff have benefitted recently. The University has established three cross-cutting research themes, with competitive funding for linked PhD studentships. Wells is a supervisor on a Digital World network, PIPIN, linked to the Centre for Assistive Technology and Digital Healthcare which is a focus for research into technology for people with disabilities, older people and people with long-term conditions. HCS makes use of available University funding for knowledge exchange (KE) activities. This has included working with industry to develop assistive technology using a local resource for promoting KE and commercial research: the University of Sheffield's Healthcare Gateway, an access point for business to faculty facilities and expertise to maximise user involvement and research income. Staff are active in the 'Participation after Stroke' theme of the South Yorkshire CLAHRC (Collaboration for Leadership in Applied Health Research and Care).

Until recently, HCS was accommodated in three separate Victorian houses. In addition to staff offices and some teaching space, these housed research laboratories available to PGRs and staff alike including a suite of eight linked rooms containing speech analysis and recording equipment. In August 2013 HCS moved to a single, more modern site, following a £1.3m refurbishment. This will enable much better contact among HCS staff and PGRs as well as an upgrade to clinical and laboratory facilities, thus enhancing research capacity. There is a resource library of SLT tests, which can be borrowed by staff and PGRs for research use. Full-time PGRs are provided with their own desk, filing cabinet and networked computer.The move represents a major investment by the University in a very successful research and teaching department. Staff and students continue to have access to excellent facilities elsewhere in the University, for example Department of Computer Science, when making high quality audio and video recordings.

e. Collaboration or contribution to the discipline or research base

Staff have been involved in collaborations with academic colleagues at this University and at other UK and overseas universities, as well as with non-academic research partners. Wells works with Prof G Brown in the Department of Computer Science to establish new methods for the acoustic and interactional analysis of large spoken corpora. Funded by competitive UoS awards, an EU Marie Curie PhD fellowship through the Sound to Sense network (2007-11) (on which Brown and Wells were senior scientists) and an AHRC speculative research project grant (2009-12) involving collaboration with the University of Tuzla in Bosnia, this collaboration has resulted in the award of

two PhDs and six peer-review publications. The VIVOCA2 (Voice Input Voice Output Communication Aid) project, which aims to produce a device which will assist spoken communication for people with severe dysarthria, is a collaboration between Cunningham, a computational speech scientist at HCS, and other University researchers (Health and Related Research; Computer Science), as well as NHS and industrial partners (see REF 3a). Rutter collaborates with Prof Martin Ball of the University of Louisiana at Lafayette to develop the discipline of clinical linguistics. This has given rise to seven peer-reviewed journal articles, one textbook and the award of the 2010 Editor's Award for best article in *Contemporary Issues in Communication Disorders*. Muskett is part of a national group that aims to examine knowledge and practice with regard to autism from a range of disciplinary perspectives. This group has been awarded funding through the ESRC Festival of Social Sciences to hold a public engagement event in November 2013. Howard's collaboration with Prof Anette Lohmander (Karolinksa Institute, Stockholm) resulted in their co-edited 2011 book *Cleft palate speech: assessment and intervention*. HCS hosted a visit by the entire SLT teaching / research staff of the Karolinska Institute (Sweden's leading medical university) in 2011, which has led to a programme of Erasmus-funded staff exchanges. Wilkinson has an ongoing collaboration with Prof Claire Penn (University of Witwatersrand, Johannesburg). The British Academy/Association of Commonwealth Universities funded three exchanges visits, including a keynote address by Wilkinson to the South African Neurological Rehabilitation Association Conference (2009). Further examples of collaboration can be found in the impact template and case studies.

Staff are regularly invited to present their research as lectures and at conferences. Among keynote addresses are: Changing the Talk of People with Aphasia in Everyday Conversations (Helsinki: Wilkinson); Clinical phonetics: past, present and future (Madrid: Howard); Clinical pragmatics and the social brain (Kanazawa, Japan: Perkins); A Psycholinguistic Framework for Research and Practice (Leipzig: Stackhouse); Examining language in autism, in context (Paris: Muskett).Conferences organised by staff include: Atypical Interaction: Conversation Analysis and Communication Impairments (Wilkinson, 2013); Evaluating Provision for Children with Speech, Language and Communication needs (Stackhouse et al, 2009); 2008 Colloquium of British Association of Academic Phoneticians (Howard, Wells).

Staff make a major contribution to shaping the content of journals in their roles as editor, associate editor, editors of special issues or members of editorial boards: *Child Language Teaching and Therapy; Clinical Linguistics and Phonetics; Journal of Interactional Research in Communication Disorders; International Journal of Language and Communication Disorders; International Journal of Speech Language Pathology; International Case Studies in Autism*. During the census period staff also reviewed for other leading journals, including *Computer Speech and Language, Speech Communication; Discourse Processes; Research on Language in Social Interaction; Journal of Child Language, Journal of Speech Language and Hearing Research;* and book manuscripts for publishers including Ashgate, Wiley-Blackwell and John Benjamins. Staff have undertaken peer review of funding applications and end-of-grant reports, for ESRC (Wilkinson is member of peer review college), NIHR, Irish Health Board, Leverhulme Trust, Nuffield Foundation, Netherlands Organisation for Scientific Research (NWO), Stroke Association, Epilepsy Action, BUPA. Professorial staff have undertaken external examining of PhD candidates at Helsinki; Göteborg; Southern Denmark; Neuchatel, Sydney; Macquarie; Witwatersrand; as well as leading UK universities.

Recognition has come from leading organisations in our field. **Howard**: President, International Association of Clinical Phonetics & Linguistics (2006-14); ESRC Mid-Career Fellowship (2010-12); UK representative, CLISPI (Cleft palate International SPeech Issues Group). **Stackhouse**: 'University of Sheffield Inspiring Women' Award (2012); Invited member of Research and Development Reference Group, Royal College of Speech and Language Therapists. **Wells**: Honorary Fellowship, Royal College of Speech and Language Therapists (2012).