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| <b>Institution: University of York</b>   |
| <b>Unit of Assessment: 26 - Modern Languages and Linguistics</b>   |
| <p><b>1. Unit context and structure, research and impact strategy</b></p> <p><b>1.1 Unit structure and context</b></p> <p>The Department of Language &amp; Linguistic Science is a world-leading centre for research in linguistics, known for its innovative work in the study of language as a structured symbolic system in its social, cultural and cognitive context. Our strength is a broad and cross-disciplinary approach that privileges no one theoretical framework. Our research strengths include these thematic areas: (i) <i>language systems</i>: the traditional 'core' fields that focus on linguistic structure; (ii) <i>language in the world</i>: the external properties of language as a communicative system, from interaction to sociolinguistics to language change; and (iii) <i>psycholinguistics</i>: internal psychological aspects, including processing, production and learning. We are committed to the integration of theoretical advances with rigorous empirical investigation using a diversity of methods. This stance places us at the leading edge of current developments in linguistics, which favour multi-faceted, mixed-methods approaches. We strive to ensure that our research will make a difference outside of academia by pursuing opportunities for impact, particularly in the forensic, clinical and educational domains. We currently have 21 staff on academic, research and teaching (ART) contracts, 2 on externally-funded research-only contracts, and 46 registered PhD students. Within the three thematic clusters, our research is conducted through several research groups. This overall organisation underpins our strategies for staff recruitment, research student recruitment, and research activities. The cluster outlines below indicate core staff, but as Figure 1 shows, the intentional intersection between groups means that each has a larger critical mass. Our submitted outputs represent the activities of all groups. Further, two research centres are the focus of major activities across groups and across the institution (see 1.2 and 1.5).</p> <p><b><i>Language systems (7 core staff)</i></b></p> <p>This cluster involves research groups in <b>Phonetics &amp; Phonology</b> and <b>Morphology, Syntax &amp; Semantics</b>, with connections to typology and language evolution. We have an increasing focus on comparative and historical cross-linguistic research, especially involving lesser-studied and typologically diverse languages, and the testing of formal theoretical predictions against new datasets or corpora. New datasets have been developed during the REF period through the ERC project <i>LanGeLin</i> (PI Longobardi, 2012-18) and the ESRC project <i>IVAr (Intonational Variation in Arabic)</i> (PI Hellmuth, 2011-17).</p> <p><b><i>Language in the World (12 core staff)</i></b></p> <p>This cluster comprises the long-standing research groups in <b>Forensic Speech Science</b> (FSS; 3 staff), <b>Sociolinguistics</b> (4 staff) and <b>History of English</b> (2 staff), and an <b>Interaction</b> group focussed around Conversation Analysis (3 staff). FSS draws on our strengths in Phonetics &amp; Phonology and Sociolinguistics, while opening up new datasets for sociolinguistic studies into accent and identity in the ESRC project <i>The Use and Utility of Localised Speech Forms</i> (PI Llamas, Co-I Watt, 2016-19).</p> <p><b><i>Psycholinguistics (4 core staff)</i></b></p> <p>Our research groups in this cluster include <b>Early Language Development</b> and <b>Second Language Acquisition</b>, and a group in <b>Language and Speech Processing and Production</b> established during the REF period. Our goal to have a stronger basis in more advanced experimental methods has been achieved by new hires (see (P1) below). Almost all research in this cluster intersects by design with Language Systems (e.g. an ESRC project on the acquisition of morphology in Eegimaa, an endangered Atlantic language spoken in Senegal (PI Brown, Co-I Vihman, 2017-20)).</p> |

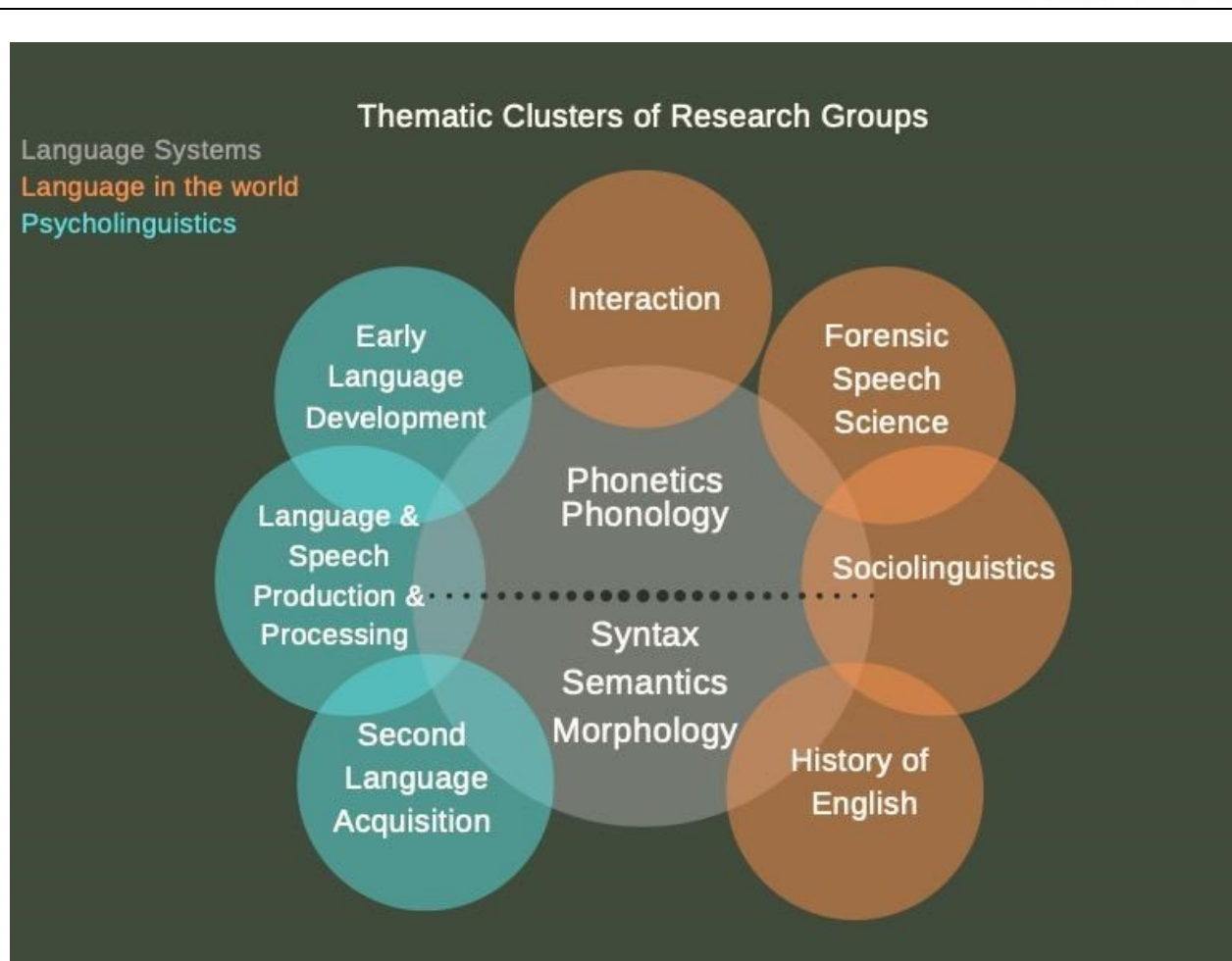


Figure 1. Thematic clusters of research groups: Language systems (middle), Language in the world (top, right), Psycholinguistics (left), and their interconnections.

## 1.2 Research objectives and developments since 2014

Following REF2014 we foregrounded 4 research objectives which we have fulfilled as outlined:

[1] *to expand in specific areas* (Interaction, Psycholinguistics)

Interaction (Conversation Analysis) was identified as an emergent area in 2014. This group has grown through new staffing (Kendrick, 2016; Drew, 2018) and forms the lead on the cross-faculty *Centre for Advanced Studies in Language and Communication* (CASLC), administered through our department (see 1.5).

Through recruiting Grillo (2016) we strengthened our research in language and speech processing and production, leading to more cross-group opportunities for experimental work. We restructured our lab space and invested in state-of-the-art equipment (2018). These infrastructure investments along with the strategic hire of an Experimental Officer (Sloggett, 2019) have advanced our capabilities in high-calibre empirical design and analysis, and ensure a strong position for our empirical research over the medium term. Supported by this investment we are creating a new interdisciplinary *PhD in Psycholinguistics*, partnering the Departments of Psychology and Education.

[2] *to adapt in specific areas of rapid change* (FSS)

A renewed and technologically advanced commitment in 2015 to FSS to embrace rapidly-evolving new technologies for measuring or quantifying acoustic properties of speech and

speaker identification, through new staff hires (French, Hughes, Harrison), and the creation of constructive partnerships with technology companies Nuance, Aculab and Phonexia using advanced software for speaker identification. Research to assess the reliability of automatic methods was central to the design of the AHRC project *Voice and Identity: Source, Filter, Biometric* (PI Foulkes, 2015-19). These expansions and changes in staffing have been matched with investment in labs and infrastructure (see 3.3 and 3.4).

[3] *to expand comparative and typological research*

The establishment of the *Centre for Linguistic History & Diversity* (2013) enabled a flourishing of studies in typology, language diversity and language change, focussed on the Morphology-Syntax-Semantics group and its various intersections. Through this Centre, we have attracted funding on several major grants (AHRC, ESRC, Leverhulme Trust; see 3.1). A recent priming grant *Events and Kinds: Theory and Acquisition* addresses the formal typology of experiential constructions paired with experiments on their acquisition in different languages.

[4] *to engage with a wide range of research funders*

Our research income was on an upward trajectory towards the end of the last REF period and has remained strong; we secured major grant income within and across the 3 thematic clusters. In the REF period up to summer 2020 our research income totalled £4,089,510. Our strategy to engage with a wide range of funders has yielded funding from AHRC, British Council, ESRC, Australian Research Council, British Academy, ERC, Leverhulme Trust, NIHR, Newton Fund, Swiss National Science Foundation, a wider portfolio than in REF2014.

We have recruited PhD students in every research group (see 2.4). The Department is part of the successful bid for the White Rose College of the Arts and Humanities DTP (WRoCAH; funded in 2013 by AHRC, renewed five further years in 2018). Additionally through WRoCAH we have a joint AHRC-industry PhD with Aculab, a speech software company.

### 1.3 Current research strategy

Based on the position just described, we renewed our Research Strategy in 2016, built around these three principles, which are presented briefly here, but which inform our approach to research, impact, and infrastructure.

**(P1) Theoretical innovation coupled with empirical rigour:**

- (a) to continue to explore lines of research which develop interactions across our research clusters, and to prioritise interdisciplinary research which cuts across traditional boundaries, and
- (b) to build a stronger experimental basis of skills and practice in our research.

**(P2) Increase the impact and outreach of our research beyond academia:**

- (a) through identifying and strengthening partnerships for impact activities based in our impact themes (see 1.4.2), and
- (b) and developing outreach through Continuing Professional Development and Knowledge Exchange (see section 4).

**(P3) Ensuring a sustainable future for linguistics research, in terms of:**

- (a) robust paths for staff recruitment and development, mechanisms to provide opportunities for all staff, post-graduate research (PGR) support and training, developing a culture in which equality, diversity and inclusion are embedded (see section 2);
- (b) appropriate lab spaces or study spaces for all (see 3.3); and
- (c) continuing to engage with a wide range of funders to support the first two principles.

## 1.4 Aims for impact

The overarching aim for impact in our Research Strategy has been to establish a culture in which every member of academic staff is aware of ways of achieving impact through their academic endeavours, which we have achieved through the structures described immediately below. Applications for research leave (see 2.2) include a section on impact generation, so that impact is a routine part of all planned research activity. Our strategy for the impact itself is to align our research outcomes into three impact themes (1.4.2), developing and consolidating relationships with partners.

### 1.4.1 Support for impact

We have 3 layers of support for impact: our Impact Officer, the Department Research Committee (DRC), and the Humanities Research Centre (HRC), which support staff in developing pathways to impact as part of grant proposals, or in developing new lines of impact from existing research. Impact is firstly coordinated and supported by a dedicated Impact Officer, who is a member of the DRC. The Impact Officer role is credited with 165 hours per annum (10% of working time) in our workload model. The role involves providing guidance and support for the development of impact, embedding impact into funding applications, the delivery of impact activities such as workshops, and the consolidation of impact activities into Impact Case Studies.

Significant support for impact from initial conception to capturing and measuring outcomes and engagement is provided through the HRC, which promotes a broad culture of impact across the Faculty of Arts & Humanities. We work closely with two Research Impact Managers, who provide overarching and individualised support for impact, including planning for, identifying, tracking and evidencing impact in research projects, and the development of impact case studies. Since 2017 the team has been augmented by a Faculty Impact Administrator who supports individual impact projects especially around evaluation, impact tracking and collecting evidence of impact. The HRC brings a significant body of expertise in evaluating public engagement and knowledge exchange activities, and administers a faculty-level internal impact accelerator fund aligned to the AHRC's disciplinary remit.

Our Impact Case Studies (ICSs) have been developed through the support above, during the REF period. Each ICS lead member of staff is also allotted 165 hours of workload, to reflect the leadership work required to develop the impact. Financial support for impact is partly from funded research projects, and partly from internal impact acceleration funds, through which we have committed £46,011 to our impact activities.

### 1.4.2 Impact themes

Our 2016 Research Strategy identifies three primary impact themes, through which we have advanced several lines of impact. These areas for our impact activities are designed to align well with the institution's interdisciplinary research themes of *Culture and Communication*, *Health and Well-being* and *Justice and Equality*.

**Language and Education:** Our approach has two strands. First, we partner teachers of A-Level English language, developing a portfolio of research-led materials to aid them, and developing ongoing relationships with them to provide better access to linguistic data, research values and research practice. The development of this theme has taken us beyond our current set of relationships, to students and a wider audience, through the development of a MOOC (*Accents, Attitudes and Identity*), reaching 3800 active learners so far.

Second, we have worked with Cambridge International to update and refine the curriculum of their A-Level English Language. As a diagnostic of the reach of this work, the revised exam was taken in 2018-19 and 2019-20 by a total of over 55,000 students in over 100 countries. Outcomes of this work form our ICS on "English Language".



**Language and Communication:** in 2014 we outlined this theme as influencing practices of health care professionals in their interactions with patients. We developed this work to contribute to the Research Theme *Health and Well-being*, taking advantage of institutional funding and support. A team involving Ogden developed an assessment questionnaire for emotional difficulties available to children and adolescents in British Sign Language (BSL), the first in any sign language. It transforms access to diagnostic tools in mental health for users of BSL, partnering with the National Deaf Child and Adolescent Mental Health Service and the Child Oriented Mental Health Intervention Centre. The BSL translation has served as a model for the adoption of the same process of translation into American Sign Language and Norwegian Sign Language.

**Language and Justice:** our work in Forensic Speech Science is world-leading and has been an area of adaptation and growth (see 1.2). Our strategy is to extend our impact with our ever-expanding links and growing reputation in this field; our other ICS is drawn from parts of our FSS research. First, at the (inter-)national regulatory level, working with the Forensic Science Regulator, the Parliamentary Office of Science and Technology, and the Home Office, we have communicated our research findings to inform and influence regulatory practices in forensic science. Second, we have mounted CPD courses for training of law enforcement professionals to incorporate audio evidence through both traditional linguistic analysis and by automated systems (see further, 4.2).

Under this theme, we have developed two new areas. One involves the practice of Language Analysis in the Asylum Process' (LAAP), using linguistic evidence for cases of disputed or unknown nationality. The other generalises from speech to multimodal perception, investigating connections between facial and vocal characteristics with regard to individual identity and others' perception. The further goal is to evaluate the capability of machine-learning algorithms inside recognition systems (e.g. at airports) to achieve equal or superior performance relative to that of human analysts.

### 1.5 Interdisciplinary research

Following strategic principle (P1) we have expanded our interdisciplinary work, evident in key publications such as Llamas et al. 2016, "Estimating the Relative Sociolinguistic Saliency of Segmental Variables in a Dialect Boundary Zone", Watt et al. 2018, "Audiovisual Integration in Social Evaluation", and Longobardi et al. 2020, "Formal Syntax and Deep History".

Interdisciplinary research activities are supported through the HRC (see 1.4.1, 2.4, 3.2.2), the cross-faculty *Centre for Advanced Studies in Language and Communication* (CASLC), and the *Centre for Research in Language Learning and Use* in the Department of Education, which forms part of our psycholinguistics network. We also have joint projects on multimodal perception and early language development with colleagues in Psychology, Electronic Engineering, and Computer Science, and participate in 2 consortia applying for EPSRC funding.

CASLC is an interdisciplinary centre involving staff from Education, Health Sciences, Language & Linguistic Science, Psychology, Social Policy & Social Work and Sociology. It is the locus of our research in Interaction and Conversation Analysis. We administer the associated degree programme *PhD in Language & Communication*, which has led to a larger and more active PhD community. CASLC attracts visiting scholars and PhD students from around the world (Algeria, Brazil, China in 2019-20). Drew participates in the project *Enhancing the quality of psychological interventions* (EQUITY, 2018-2022, NIHR); see section 4.2.

### 1.6 Open research and research integrity

We are committed to participating in the open research environment, following the institution's Statement on Open Research which places emphasis on making all stages of research activity inclusive and open [IES:15-16]. Our departmental open access strategy was established in 2018 and includes:

- Encouraging staff to publish in dedicated open-access journals (e.g. Glossa) or with open-access publishers (e.g. Language Sciences Press, White Rose University Press).
- If gold access for articles is not available, promoting routes to green access (e.g. using the White Rose Research Online open repository).
- Making corpora and datasets publicly accessible where possible (e.g. our submitted database *Intonational Variation in Arabic*).

The Department Research Committee (DRC) acts as a guiding and enabling mechanism to ensure research excellence and quality, and has oversight for research integrity. In 2012 we founded our own Ethics committee to serve the particular needs and challenges of linguistic research. The committee comprises staff, postgraduates, and lay members. It reviews and monitors all research proposals and plans for data management for both staff- and student-led research, holding to the highest standards of data collection, storage, and management [IES:17]. The committee is autonomous within the department, and reports to DRC, then upwards at faculty-level and centrally within the university. The Department is compliant with the UUK *Concordat* (see 2.3) to support Research Integrity, and participates in the institutional Research Integrity Forum [IES:14].

## 2. People

### 2.1 Staffing strategy

Staffing policy is informed by our strategic aim to maintain or strengthen our research clusters and promote high level interaction for research and impact between them (see 1.3). We place particular emphasis on constant improvement to the research base in empirical and experimental methods, with these hires in the REF period: **Language Systems:** Phonetics & Phonology (Bailey, Chodroff); **Language in the world:** Forensic Speech Science (French, Hughes, Harrison); History of English (Zehentner (2017-2020)); Interaction (Kendrick); Sociolinguistics (Childs); **Psycholinguistics:** Language processing & production (Grillo, Sloggett). The strategy-led hires of 7.2 FTE new ART staff over the REF period have resulted in a head-count increase of 3 women and 5 men since 2014.

All category A staff are on open contracts (except one, whose position covers a secondment, 2018-2022). All category A appointments since 2012 have been at Lecturer level, apart from French, a fractional strategic professorial appointment (0.2 FTE in 2015). As part of our emphasis on empirical and experimental methods we have hired new staff who are not category A (Sloggett, Harrison, see section 3) to advance our research and impact agendas, and we have significantly developed our infrastructure during the REF period to support their work (see 3.3).

### 2.2 Staff recruitment and development

Staff recruitment has been driven by the targeted expansions in research groups as just described. Historically in our department male staff have outnumbered females in the ART ranks. We reviewed our internal procedures in 2016 and set up mechanisms to address inequalities in all aspects of department activity, to promote a more inclusive culture. We made changes in our mechanisms for Recruitment, Career Development and Research Leave (see below), and we have been actively involved with the institution's Equality, Diversity and Inclusion strategy [IES:35-36], both in terms of ensuring best-practice in our internal procedures, and in preparing an application for a Bronze-level Athena SWAN accreditation. All staff participate in online **Equality, Diversity & Inclusion (EDI)** training; staff with major management or decision-making responsibilities receive training in unconscious bias before taking up their roles.

The process of recruitment is guided by principles of EDI. Job announcements are specifically worded to encourage female applicants and applicants from traditionally underrepresented groups, and make specific reference to possibilities for flexible working. We aim for gender parity

on all recruitment panels. All staff are required to take unconscious bias training before joining a panel, and from 2019 each panel has an external observer/commentator on implicit bias.

We have a long-standing “family-friendly” culture in the department with regard to flexibility in working hours or overall FTE, via open-channel communication with the Head of Department. Our departmental scheduling of meetings, research groups, and colloquia is designed to allow for maximal participation – no formal meetings running after 4pm, except for our weekly colloquia (4-5:30pm). It is part of standard institutional procedure to support staff in flexible or remote working, according to their various circumstances. Staff may submit a “constraints” form annually to flex their timetabled hours (primarily teaching) around family or other commitments/needs, and many exercise this option. Staff may also flex their FTE to better suit their needs outside of the workplace.

**Career development** is supported by (i) an institutional framework of *Performance Expectations* for each academic grade, (ii) annual *Performance and Development Review* (PDR), and (iii) our internal Promotions Panel (see below). The Performance Expectations are aligned with the criteria for promotion, and the PDR has a specific component for the expression and discussion of career aspirations and pathways to support them. Career development for fixed-term staff is treated identically to that for open contract staff, relative to the time frame of appointment. Senior staff take a guiding role in advising the HoD when opportunities arise for staff secondments both within the university and externally.

The department set up a formal internal Promotions Panel in 2018, balanced for gender and academic area, to provide a more visible focus for the process and encourage staff, and to provide parity and fairness across the department. The panel provides support, guidance and calibration relative to career stage for all staff. Since its establishment, annual applications for promotion more than doubled across the department, essentially balanced for gender. Of ART staff, four Lecturers (two men, two women) have advanced to Senior Lecturer, and four Senior Lecturers (two men, two women) have advanced to Professor during the REF period.

Our departmental Workload Model factors in a proportion of research time for all ART staff. In addition to protected time during regular terms, research-active staff are eligible for 6 months’ research leave after 3 years of regular contractual work. Staff who have had major administrative roles in the unit or the institution may be eligible for a longer period of research leave at the end of their administrative term.

Through these mechanisms, and through EDI training and guidance specifically for staff involved in REF planning and decision-making, in line with the Institution’s Code of Practice, **REF-related decision-making** has been sensitive to different demographic dimensions across the staff. We have made decisions regarding outputs based entirely on assessed quality, and further analysis suggests that we are achieving good balance with regard to gender in our research environment: at the census date, 41% of our staff (FTE) are female, who account for 46% of the submitted outputs.

### 2.3 ECRs and PDRAs

All category A staff (including fixed-term) participate in the institution’s training programme *Post-Graduate Certificate of Academic Practice*, which provides skills to support professional development and help staff find different ways to contribute to their academic unit. In our department, new staff are associated with the activities of the relevant research groups and are assigned an Academic Mentor, who provides an independent point of contact during the probation period, with termly meetings. In conjunction with DRC, the Mentor guides new staff to and through research training opportunities, such as the Grant Writing Bootcamp run by the institution’s Research Theme Champions [IES:4]. Up to mid-2020, three of our early career staff

have participated, leading to two UKRI grant proposals so far. The effectiveness of our mentoring of junior staff is supported by their profile of grant applications and scholarly outputs.

The University received the European Commission's *HR Excellence in Research* award in 2010 and retained this award in 2018, in recognition of a commitment to the implementation of the principles of the *Concordat to Support the Career Development of Researchers* [IES:27-28]. Our department's action plan, developed in 2015, follows institution-level practice and further supports career development through two departmental initiatives. All PDRAs have an annual Performance and Development Review (see 2.2), with a designated member of senior academic staff who is not on their project. The designated senior staff member has an overview of all of the PDRAs' experiences, and feeds relevant information to the Department Management Team at the annual overview of PDRs.

We have had an average of 5 PDRAs each year of the REF period. We have a strong and continuing culture of helping PDRAs on to new posts, or exploring further research support at York by guiding them to submit grant applications as their project work comes to completion. 17 PDRAs have started employment with us since 2013. Of the leavers, several have secured permanent ART posts or posts in government offices, two have remained at York in other roles, and one (Gully) has her own BA Postdoctoral Fellowship (2019-22).

## 2.4 PGR training and supervision

We run three PhD programmes: *Linguistics*, *Language & Communication*, and *Applied Linguistics* (opened in 2016; shared with Education). We also offer an MA by Research in *Linguistics*. Our incoming cohort of PhD students averages 8-10 per year, having risen to this level towards the end of the last REF period; in this REF period our graduates have gone on to permanent jobs in academia, industry and government offices in the UK, Ireland, Europe, Asia, and North and South America.

We have faced challenges from shrinking funding sources, but have maintained our target intake, gaining studentship support during the REF period from: AHRC/WRoCAH, AHRC/Collaborative Doctoral Award with Aculab, ESRC/White Rose DTP, ESRC/White Rose DTP Advanced Quantitative Methods, Wolfson Foundation, Sasakawa Foundation, University China Scholarship, and the University Overseas Scholarship. We have also offered 3 full PhD scholarships supported by department-internal funds, and will offer 3 more through a specific bequest, which will be focussed on research involving Africa.

PGR students meet with their supervisor regularly, at a minimum of 8 times per year. Each student also has a larger Thesis Advisory Panel which meets twice a year to monitor progress and quality of the supervision. Since 2016, PhD students follow a system of progression with formal reviews of progress at 12 and 24 months for full time students. The progression panel is independent of the supervisory panel, and assesses whether the student has met the university criteria, making formal recommendations as necessary regarding student progression.

In the department we provide core skills training for all our PGR students. To bring together all incoming students and establish a sense of community, we run a weekly *First Year Doctoral Seminar*. This covers our activities across our three thematic clusters, as well as imparting research and study skills. All students access our *Research Training Seminar*, a methods-based year-long module for all postgraduates. In line with our aim to raise the level of experimental design, methods and statistical analysis to the highest level (Principle P1), we have enhanced the training provision so that each doctoral student has a dedicated advisor for statistical analysis. Our high-level skills training is complemented by the central Research Excellence Training Team which provides support for all PGRs in developing key transferable skills.

PGR students are aligned into our research groups and participate in research group meetings, and the departmental colloquium. These provide key training opportunities and the chance to



discuss the work of leading researchers face-to-face, as well as giving the opportunity for some to co-present at conferences and co-publish with staff. Over the REF period we have 17 joint publications in refereed outlets that we would grade 2\* or better (9 staff publishing with 15 students). Our postgraduate students run the in-house publication *York Papers in Linguistics* and host their own annual conference *PARLAY* which has run since 2013. We hold two PG Presentation Days per year, at which our PG community gathers, along with academic staff, to view students' posters or listen to students' research presentations. Students receive oral feedback on the poster and written feedback on the presentations.

Through the different research groups, more subject-specific training is provided. For example, the CASLC group hold weekly data sessions for staff and students and offer training workshops in Conversation Analysis; Ogden offers weekly phonetics training sessions for PG students. Other groups, such as FSS, Syntax, Second Language Acquisition, and Early Language Development, hold regular training or discussion sessions for groups of students in those areas.

Our students are part of a broader PGR community which is vigorously supported by the HRC (see 3.2.2). The HRC administers the WRoCAH DTP, through which some PhD students receive support, and all students may benefit from the various WRoCAH-based training programmes. The HRC offers a full programme of training sessions, on writing and publishing, grant applications, careers, and research ethics. From its faculty-wide remit, the HRC offers interdisciplinary project grants encourage students to take initiatives, design and deliver activities (reading groups, symposia, exhibitions, schools workshops, engagement projects, research showcases, conferences) and to see themselves as contributing to the wider community of researchers.

### 3. Income, infrastructure and facilities

We have maintained a high level of research income over the REF period. We aim to support research activities through protected research time, guided research support, and investment in physical and technical infrastructure commensurate with our research aims.

#### 3.1 Research income

Our research income was on an upward trajectory towards the end of the last REF period and has remained strong. In the REF period up to the end of FY19-20 our research income totalled £4,089,510, averaging £584,216 per annum which equates to £30,037 per submitted FTE.

Research has flourished under the umbrella of the Centre for Linguistic History & Diversity (funded initially by a seed grant of £60,000 from the University 2013-16) including the major grants *Languages Genes Lineages* (PI Longobardi, 2012-18, ERC), *Combining Gender and Classifiers* (Co-I Brown, 2013-15, AHRC), *Matches and mismatches in Nominal Morphology and Agreement: Learning from the Acquisition of Eegimaa* (PI Brown, 2017-20, ESRC), *VP Topicalisation in Languages of Eurasia* (PI Sells, 2018-19, Leverhulme Trust), and *Feast or Famine: Confronting overabundance and defectivity in language*, (Co-I Brown, 2020-23, AHRC). Other major projects in the period are *Pluralised Mass Nouns as a Window to Linguistic Variation* (PI Tsoulas, 2016-19, Leverhulme Trust), *Voice and Identity: Source, Filter, Biometric* (PI Foulkes, 2015-19, AHRC), *The Use and Utility of Localised Speech Forms (TUULS)* (PI Llamas, 2016-19, ESRC), *Accent Bias in Britain (ABB)* (Co-I Watt, 2017-21, ESRC) and *Intonational Variation in Arabic* (PI Hellmuth, ESRC, 2011-17).

Funded projects drive the research which feeds into our lines of impact (see 1.4.2), and provide financial support for impact generation. Our ICS on "English Language" is based on the research of several staff, including some supported by AHRC and Swiss National Science Foundation. Our ICS on FSS has drawn on funding to 3 major AHRC and ESRC grants.

## 3.2 Support for research

### 3.2.1 Unit Level

Our Departmental Research Committee (DRC) provides support for all aspects of research. It is composed of staff representing different research groups and career stages, balanced for gender, and one post-doctoral researcher, and meets at least once per term. DRC leads on monitoring research quality and integrity, reviewing and revising strategy, awarding research leave, and supporting staff in the development of outputs and grant applications. It reviews each research leave application, and typically endorses and focusses on a small number of achievable outcomes and outputs with the highest research effectiveness. Major research outputs and all grant proposals go through internal peer review, directed by DRC.

The practice of our research is supported first by departmental mechanisms. Research groups have three hours of dedicated meeting time (never used for teaching) one day a week, with several research spaces available (see 3.3). Some staff use this slot for quiet-time writing. All staff have an annual research allowance of £500; other institutional funds are available competitively. Staff increase their allowances with “bankable” funds generated through grant applications and awards, via a dedicated research support line in the annual department budget. These funds are typically used for networking, hiring research support staff, or for extra experimental participants.

### 3.2.2 Humanities Research Centre

In addition to our research groups and DRC, research support for our staff is provided at faculty level through the HRC [IES:46], to which we contribute as one of eight departments in the Faculty of Arts & Humanities. As part of our department's commitment to the HRC, Ogden is currently serving as Director of the Humanities Research Centre, and Associate Dean for Research (2018-22). He plays a guiding role in bringing forward cross-departmental and interdisciplinary research opportunities, and gives linguistics a prominent position in the faculty's research agendas.

The HRC has expanded its staffing to include a senior research coordinator, a research coordinator and a research development manager. These staff provide key input and information from inception to completion of a research project, identify key funding opportunities, work on all aspects of proposal development, including lines of impact, work on all budgetary matters, and organise mock interviews.

For the postgraduate community, the HRC provides a suite of training and networking events, and has workspaces for 126 postgraduate students across the Faculty. There is support for third year PhD students through the HRC Doctoral Fellowships Competition, and HRC offers Postdoctoral Fellowships to recent York graduates, providing personal workspace, access to research support and a modest research grant.

## 3.3 Research infrastructure and facilities

Moving forward the agendas in our Research Strategy, we appointed Sloggett in 2019 to the newly-created academic support role of Experimental Officer, promoting experimentally-oriented interaction between the clusters of *Language Systems* and *Psycholinguistics*. Harrison (0.3FTE) brings additional technical expertise to our teaching, training and research in FSS.

Over the REF period we have invested considerably in our infrastructure, from external and internal funds. An investment of £80,000 created a new, larger and near-professional quality recording studio/soundproof room to replace the old recording studio, and a further £5,000 funded a new video analysis lab (supporting our developing research in Interaction), as well as a portable interaction lab. Much of our equipment expansion has come through University priming

funds supporting applications from early-career staff to advance their research agendas: a total of £73,000 supported the acquisition and installation of 2 eyetrackers (award to Grillo), and ultrasound tongue imaging equipment and an electromagnetic articulograph (award to Bailey, Chodroff). The expanded and improved facilities are part of the implementation of our group-level and cluster-level objectives (see 1.2, 1.3), aligned with planned changes in personnel and research focus.

Our research in **FSS** has benefitted from a significant donation of Automatic Speech Recognition equipment by Nuance Communications as part of a cooperative agreement (see 3.4). The **Psycholinguistics** lab has been totally refurbished with new computers and the latest Eyelink eyetracker technology, with 2 eyetrackers (see above) which are used by staff in the Psycholinguistics cluster and the groups the cluster intersects with (see Figure 1). An eyetracker adapted for use with infants in the Babylab is now replaced with the latest Eyelink eyetracker through a successful bid for £30,000 from UKRI's World Class Labs initiative. The new critical mass centred around the study of **Interaction** has been supported by investment of internal resources, with a new academic meeting space and a high-specification video analysis lab.

These particular investments are part of our research strategy (P3), facilitated in part by increased space made available by the University in 2016, to have appropriate lab spaces for all key research activities, beyond the specialist facilities described above. We created a new sociolinguistics lab, initially to support two ESRC-funded projects, *TUULS* and *ABB*, and a new syntax-semantics lab, initially to support a PDRA and 2 PhD students contributing to the Leverhulme Trust-funded project on mass nouns, now supporting the internally-funded project *Events and Kinds: Theory and Acquisition*.

For broader research activities across the department, for both staff and students, we created our Interactive WorkSpace in 2016, which has configurable space for informal and semi-formal brainstorming, as well as small-medium research group meetings. All PGR students have access to study spaces. Within the department our PGR project room provides dedicated study space for up to 15 students. Other students have their workspaces in the nearby HRC.

### 3.4 External partners and contributions in kind

In 2016 we began a formal collaborative relationship with Nuance Communications, the international leader in speech technology for forensic and security applications. Nuance donated their cutting-edge automatic speaker identification and verification systems and issued 17 site licenses, the total having a value of at least £700,000. This technology is used in postgraduate and staff-led research, such as Watt et al. 2020, "Assessing the effects of accent-mismatched reference population databases on the performance of an automatic speaker recognition system", which is part of our submission and also one ICS. It is now axiomatic that the best forensic speaker comparison evidence produced by Automatic Speech Recognition (ASR) systems involves not only measuring the degree of similarity between criminal and suspect recordings, but also calibrating the recorded data against a 'relevant background population'. The Nuance technology has enabled us to address this question empirically and feed the results back directly to the forensic speech science community and security services. In return, through our research, Nuance receives significant user feedback, enhanced practical applicability of its ASR technology and its application in accent detection, access to a pool of research students, as well as larger potential outreach for its products through their use in our FSS CPD course (see 4.2).

The department has also been gifted a set of databases originally collected by the Ministry of Defence, now cleared and repurposed for the benefit of the academic community. These are large sets of telephone-transmitted speech collected as representative samples of British English for evaluating speech technologies under the Home Office CONTEST programme.

#### 4. Collaboration and contribution to the research base, economy and society

Our strategy here (P2) is to build up our national and international scholarly networks, in order to extend the reach and visibility of our research, to increase opportunities for funded collaborative research, to make societal contributions through our research, and to contribute to knowledge exchange.

##### 4.1 Networks, collaborations and partnerships

Our key national network is the **White Rose Network (Leeds, Sheffield, York)**, through which we participate in research projects with colleagues in Leeds and Sheffield. The AHRC-funded grant *Feast or Famine: Confronting overabundance and defectivity in language* involves Sheffield and York staff; the priming grant *Events and Kinds: Theory and Acquisition* is a recent collaboration funded primarily from York, with support from Sheffield. Through funding from WRoCAH, the network created the training programme Extended Learning in Linguistics for Postgraduates (ELLiPs), offering advanced training in phonology and syntax for 2 years.

##### *International collaborations*

Much of our research is necessarily inter-institutional, based on its subject matter. We have long-term relationships with research institutions and groups of researchers around the world. Through the Centre for Linguistic History & Diversity (CLHD) we have signed Memoranda of Understanding with the University of Pennsylvania and the National Institute for Japanese Language and Linguistics (NINJAL, Tokyo). NINJAL now hosts the Old Japanese corpus created originally at Oxford with York input (*Verb Semantics and Argument Realization in Pre-modern Japanese* 2009-15, AHRC, Sells Co-I). Research exchanges in 2015 and (early) 2020 have set the basis for planned collaborations to resume in 2021.

Our research in speech, social meaning and change has produced high-quality research outputs through links with the MARCS Institute for Brain, Behaviour and Development (Western Sydney) and with the New Zealand Institute of Language, Brain and Behaviour (Canterbury), the former supported through an ARC grant and the latter through internal funding and a *Leverhulme Trust visiting professorship* for Jen Hay (NZILBB).

Staff from our department contributed to the formation in 2017 of the York Interdisciplinary Global Development Centre (IDGC) [IES:10]. Through the AHRC Global Challenges Research Fund, Kerswill partners York colleagues in History, Environment and Geography, and colleagues in Ghana on an interdisciplinary project to investigate “Galamsey” – illegal artisanal and small-scale gold mining with massive environmental and human costs, involving 1m people. The project aims to investigate how this problem emerged and has been sustained and why it is progressing along an environmentally destructive and unhealthy path. The idea was initiated by the University of Ghana at the request of the Government of Ghana, and then developed at York through Kerswill’s long-standing connections to that university.

##### *External partners: Forensic Speech Science*

Our long-standing partnership with J.P. French Associates, which involves the mutually beneficial exchange of research and training, is symbiotic and unique in the country. Members of the Department have consulted through J.P. French Associates on various forensic cases involving evidence in varieties of English, French and Arabic. Our research in this area also informs the science and the legal practice of using speech evidence. Since 2012 French has been Chair of the UK Home Office Regulator’s group on Forensic Speech and Audio Analysis. We continue to make our expertise available to inform both regulatory and parliamentary matters of the quality of audio evidence.



**External partners: The Education sector**

Our strong relationships with key stakeholders in the education sector have developed over a number of years. In addition to the work reported in our ICS on “English Language”, Marsden’s AHRC-funded *Meaning in Language Learning* network (MiLL) network is the basis of our partnerships with modern foreign language teachers. The MiLL network has 18 members around the UK and 4 in Europe and the US. Two key goals are to develop collaborative research projects that differ from existing research by incorporating insights from both theoretical linguistics and classroom practice and to communicate linguistic findings about language learning to a wider audience.

**4.2 Contribution to society and wider engagement**

We aim for our research to directly address societal issues through leveraging existing work or building on it in new directions.

**Facing societal challenges**

The research project *Accent Bias in Britain (ABB)* (ESRC 2017-20) involving Watt is an explicit response to the 2015 call from the Social Mobility and Child Poverty Commission. The aim of the project is to investigate attitudes to regional accents, and the effects that accent bias may or may not have on access to the professions among speakers of different varieties of UK English. The results show that accent bias can exist, but can be overcome through the raising of awareness of potential unconscious bias. The project team created two interactive tutorials, one for professionals, such as recruiters or HR staff in law firms, and the other for students aiming for a career in an elite profession.

Hellmuth responded to the British Academy Sustainable Development call, proposing a project on Language and Identity in Southern Sa’idi Arabic. Her research network also participated in Refugee Council collaboration briefings, a response to a government call via the Refugee Council in North Yorkshire. An [outreach webpage](#) was created in September 2018 to support briefings on home language maintenance in Arabic for staff, volunteers and clients of the Refugee Council in North Yorkshire.

Drew participates in the NIHR-funded project *EQUITY*, which investigates how to improve the way psychological therapies are delivered by telephone. Using Conversation Analysis, the team will develop materials to raise awareness for both practitioners and patients as to how to make conversational choices which will focus on the patient’s issues, and provide patients with the means to describe both their conditions and clear and appropriate goals for their ongoing treatment.

Keren-Portnoy’s grant *Overcoming social disadvantages through reinforcement of babble in infants from low socioeconomic homes* (BA, 2019-21) investigates whether low SES children can be encouraged to babble more, which will promote earlier lexical advance. The research involves an integral partnership with York Children’s Centres.

**Knowledge exchange (Continuing Professional Development)**

Members of the Forensic Speech Science group and staff from J.P. French Associates collaborate in the design and delivery of the Continuing Professional Development (CPD) course, which provides an introduction to forensic speech and audio analysis. It directly informs the professional practice of police and security services. The course has run six times, with a total of 61 participants (lab requirements limit the number to a maximum of 12), the majority of whom (c.70%) were from national and international law enforcement and security services, including the National Crime Agency, Ministry of Defence, and Royal Canadian Mounted Police.

Hellmuth developed a set of CPD workshops and now the [York English Language Toolkit](#) project which have been central to the development of contacts and collaborations among English Language teachers (see our ICS on “English Language”).

Our staff also participate in [two CPD courses in Conversation Analysis](#), organised with colleagues in Sociology through CASLC. The first, “Core topics in CA”, focuses on practical, hands-on skills in data analysis to be applied directly to the study of naturally occurring social interaction and language use across a wide range of settings. Participants include postgraduate students and staff from departments in the UK and several other countries. The second course, “Communication in Medical and Healthcare Interactions”, is aimed at medical researchers, especially medical communication, or clinicians, and provides direct training in the application of Conversation Analysis to medical diagnosis.

### ***Broader outreach to local communities***

Locally, three of our staff have led research-based sessions for the general public at the York Café Scientifique (Keren-Portnoy, Ogden, Tsoulas). Keren-Portnoy has also given sessions on language acquisition in the Shine residential programme, supporting pupils from 21 schools across Yorkshire, the Humber and North East to reach their full potential. Several academic staff participate in school visits, talking and teaching about our field and our research. We strongly engage with the mission of Widening Participation around North and East Yorkshire in particular.

In Senegal, as part of the ESRC-funded Eegimaa project, PDRA Sagna has made 16 broadcasts on Zig FM (projected audience: 2000-5000). These broadcasts are made in Eegimaa, a local and endangered language; they cover a variety of topics on culture, heritage, and practical life knowledge. The project also develops literacy materials to promote the education and use of Eegimaa.

### **4.3 Contribution to discipline**

As a major department we aim to contribute to the discipline through direct involvement nationally with the Linguistics Association of Great Britain (LAGB), and hosting major international conferences across a range of subject areas. At the individual level, our staff contribute through major editorial and review roles.

We hosted the LAGB annual conference in 2016; also, Hellmuth served as LAGB Treasurer, 2013-18. We have been directly involved with the UK Linguistics Olympiad for several years. We have further hosted a range of (bi-)annual international conferences: Workshop on Altaic Formal Linguistics (WAFL) 2015; UK Language Variation and Change (UKLVC) 2015; International Association for Forensic Phonetics and Acoustics 2016; Germanic Society for Forensic Linguistics 2018; Diachronic Generative Syntax (DiGS) 2018; British Association of Academic Phoneticians (2020; postponed to 2021). We co-organised the 28<sup>th</sup> Japanese-Korean Linguistics conference (2020; hosted by UCLan).

For several years we have participated in the Advanced Core Training in Linguistics graduate school (ACTL). This is a discipline-specific training program for PhD students in Linguistics, founded in 2004 with a two-year start-up grant from the AHRC, now jointly funded by several institutions. Building on our commitment to this participation and our success with ELLIPS (see 4.1), we will organise and host future meetings of the annual ACTL Summer School.

Our staff serve on many **editorial boards**, of which some are: Canadian Journal of Linguistics (Taylor), Journal of Child Language (Vihman), Journal of East Asian Linguistics (Sells), Journal of Japanese Linguistics (Sells), Journal of Linguistics (Sells), Journal of Second Language Pronunciation (Hellmuth), Language in Society (Kerswill), Natural Language and Linguistic Theory (Sells), Nordic Journal of Linguistics (Sells), Oxford Linguistic Bibliographies (Longobardi), Pedagogical Linguistics (Marsden), Phonetica (Ogden), Research on Language

and Social Interaction (Kendrick), Semantics & Pragmatics (Zweig), Speech Communication (Foulkes). French is an **editor** of the International Journal of Speech, Language & the Law.

In addition, several staff are members of **grants and funding review bodies**, including: AHRC Peer Review College (Brown, Sells), British Academy/Leverhulme Small Grants (Kerswill), ESRC Peer Review College (Hellmuth, Keren-Portnoy, Marsden, Vihman), Carnegie Trust (Foulkes, Vihman), Fulbright Grant Committee (Longobardi), Royal Society APEX Awards Review College (Longobardi). In terms of broader aspects of academic and operational evaluation, several staff have been part of **national or international review committees**, including: Department/Programme review: EQA Reviewer for outputs in the Faculty of Humanities and Social Sciences, University of Newcastle (Kerswill, 2018-19); Evaluation of Research in the Humanities in Norway (Kerswill, 2016-17); External Assessor, University of Edinburgh, English Language and Linguistics (Sells, 2017); External reviewer for proposals for new BA in English Language and BA in Linguistics, Queen Mary, University of London (Kerswill, 2017); Revalidation/Review Panel (Linguistics and Communication) Ulster University (Tsoulas); Steering Committee International (Founding) Member, National Graduate Researcher School in Linguistics and Philology, Norway (Sells, 2014-17).

Recognition of the esteem accorded to our staff is indicated by our **invited keynote lectures**, including: Biannual International Conference on the Linguistics of Contemporary English, University of Madison-Wisconsin (Llamas, 2015); Cambridge Comparative Syntax Conference (Tsoulas, 2017); Child Language Symposium (Vihman, 2015); European Society for Philosophy & Psychology (Estonia, Vihman, 2015); Finnish Conference of Linguistics (Kendrick, 2016); French Association for Cognitive Linguistics (Foulkes, 2015); International Association of Urban Language Studies. Japan (Kerswill, 2018); International Circle of Korean Linguists, Helsinki (Sells, 2017); International Seminar on Speech Production, China (Vihman 2017); Intersubjectivity in Action Conference, Helsinki (Kendrick, 2017); Language and Borders: Rethinking Mobility, Migration and Space, Bristol (Llamas, 2018); Linguistic Society of America, Special session on Data Archiving (Ogden, 2016); Linguistic Symposium on Romance Languages, Toronto (Longobardi, 2018); Manchester Forum in Linguistics (Hughes, 2019); Methods in Dialectology XVI conference, Tokyo (Kerswill, 2017); Workshop on Sociophonetic Variability in the English Varieties of Australia, Brisbane (Foulkes, 2018); Workshop on Speech Perception and Production across the Lifespan, UCL (Foulkes, 2017).