

<b>Institution: Coventry University</b>
<b>Unit of Assessment: UoA4 Psychology, Psychiatry and Neuroscience</b>
<b>1. Unit context and structure, research and impact strategy</b>

## Overview

Psychology research at Coventry has experienced a step-change in quality and quantity over the past seven years as a result of significant and strategic investment from the University. The unit's research income is five times greater than its income during the previous REF period and is now almost double the median income recorded for areas submitted to Unit of Assessment (UoA) 4 in REF2014. 21% of the unit's outputs are in the top 10% of cited papers (field weighted) and 34% of outputs are in the top 10% of journals for the field, measured in SciVal using SNIP (accessed 10/03/2021). The total of PhD completions has increased by six times.

Research at Coventry University (CU) is organised into trans-disciplinary, challenge-led research centres, closely aligned to the United Nations Sustainable Development Goals (SDGs).

Psychological science is relevant to most of these centres, given the importance of human factors in these Goals. As such, the unit's psychology-focused research is spread over multiple research centres. This dispersal allows researchers to work in truly trans-disciplinary ways and maximises the contribution and impact of their research. As a result, some psychology researchers are returned in other units of assessment, and the psychology unit itself, focuses on researchers working in the fields of educational psychology, forensic psychology, health psychology and social psychology. Researchers work across three research centres: the recently formed **Centre for Global Learning, Education and Attainment (GLEA)**; the **Centre for Trust, Peace and Social Relations (CTPSR)** and the **Centre for Intelligent Healthcare (CIH)**.

Five unit members (**Adefila, Breadmore, Carroll, Clouder** and **Tramontano**) are part of **GLEA**, working at the interface of psychology and education. Their work focuses on theoretical and practical understanding of how learning can be truly inclusive for all groups of learners, including disadvantaged learners.

Three unit members (**Farias, Jong** and **Sullivan**) work within **CTPSR**. Two (**Farias** and **Jong**) focus on the role of religious communities and spiritual beliefs and practices in stimulating the development of prosocial behaviours and emotions, helping mitigate social injustice. One (**Sullivan**) works at the interface of social psychology and international relations, understanding collective emotions and how they can guide behaviour.

Three unit members (**Curtis, O'Doherty** and **Wright**) work in **CIH**, within the Behaviour and Implementation Science theme. Their work aims to develop and evaluate innovative, holistic, person-centred approaches and interventions to address global health needs.

Across these groups, and what draws the unit together, is a common focus on using the theoretical frameworks and rigorous empirical research of psychology as a discipline to address and inform societal issues in trans-disciplinary teams.

## Unit-level environment template (REF5b)

### History of Psychology Research at Coventry since 2014

CU has a long-established strength in psychology, with a large School of Psychology and Behavioural Sciences (PSBS), supporting over 2,000 undergraduates and over 600 taught postgraduates. The University decided to make a significant investment, increasing the capacity of high-quality research in psychology, by creating the centre for Psychology, Behaviour and Achievement and making several high-profile new appointments (discussed in section 2).

In 2019, as a result of a careful reflection on the progress of the research centres across the University, a decision was made to move away from discipline-based research towards challenged centres. Therefore, psychologists moved into several research centres, reflecting the value of psychology across the profile of CU research. Of the 13 research centres at the University, there are psychologists playing prominent roles in seven of them, detailed in Table 1. In many cases, psychologists are returned to UoAs relating to their current research centre rather than to UoA4, reflecting their trans-disciplinary focus.

**Table 1: Psychologists across the University and their affiliations**

UoA	Name	Centre
UoA3	Prof. Turner	CIH
UoA4	Dr O'Doherty, Dr Wright, Dr Curtis	CIH
	Prof. Carroll, Prof. Clouder, Dr Breadmore, Dr Tramontano, Dr Adefila	GLEA
	Prof. Sullivan, Prof. Farias, Dr Jong	CTPSR
UoA12	Prof. Harris	Future Transport and Cities
UoA14	Dr Abell	Agroecology, Water and Resilience
UoA19	Dr Liebling	CTPSR
UoA24	Prof. Duncan, Dr Oxford	Sport and Exercise Science
UoA32	Prof. Moody	Arts, Memories and Communities

### Performance against REF2014 Objectives

As a result of significant investment from the University, the Unit has achieved its ambitious objectives. The achievement against the stated objectives has been as follows:

1. To extend and develop the unit's network and reputation in Child Development and Education, leading to building and evaluation of theoretically grounded interventions:

Researchers have radically extended their network in child development and education and are now internationally respected experts in the area. The unit successfully completed its second large-scale educational intervention trial funded by the Education Endowment Foundation and received funding for two further large-scale trials, both of which are now in

the analysis phase. The unit has also been asked to conduct various reviews and create guidance for government policy makers, described in more detail below.

2. To develop the unit's research understanding, the identities and resilience of varied communities, working at the interface of theory and practice:

Researchers have conducted research in a very wide range of communities around the world, including those dealing with natural disasters or emergencies (**Sullivan**), those with varying religious and spiritual beliefs (**Farias** and **Jong**) and those recovering from sexual assault or abuse (**O'Doherty**). All the unit's work is conducted at the interface of theory and practice and in many cases this work has given a voice to communities who traditionally are not widely heard. It, too, has generated several significant new insights. For example, examining the underpinnings of religious belief in a wide variety of communities and using a wide range of methodologies, has demonstrated the importance of social and cultural bonding in religious belief (<https://pureportal.coventry.ac.uk/en/persons/miguel-farias/publications/> Scientific Reports 7, 15100). A focus on quality of life and social status measures highlights the long-term consequences of relocation of individuals in disaster areas (Int. J. Disast Risk Re, [10.1016/j.ijdr.2020.101629](https://doi.org/10.1016/j.ijdr.2020.101629)).

3. To develop novel methodologies to understand empathy and emotional and sexual reactivity in sexual and violent offenders, informing rehabilitation programmes used within the community:

Excellent progress was made towards this objective, with **Professor Erica Bowen** and **Professor Sarah Brown** working closely with community-based rehabilitation programmes. Over the REF period however, the unit changed its focus of its research from the rehabilitation of offenders to the support of victims of abuse as it aligned the forensic research more closely with the strength in health psychology (submitted to UoA3 in 2014, now submitted to UoA4). This has resulted in ground-breaking work, including the ongoing MESARCH project which looks at how victims of abuse can be best supported in sexual abuse referral centres.

4. To develop inter-disciplinary research in the area of conflict resolution with colleagues working in Politics and International Studies:

The inter-disciplinary work has certainly exceeded the unit's stated ambitions. Researchers work as part of a trans-disciplinary research centre (**CTPSR**) which houses researchers from psychology, politics, sociology and international studies, with a particular focus on conflict resolution. The unit also forms part of several other trans-disciplinary teams across the University, as described above.

5. Anticipation that the unit would achieve 25 new PhD completions in the 2014 REF period:

44 new completions across the REF period were achieved, almost double the 25 completions predicted. This equates to four completions per FTE over the REF period. The success in this area is due to many factors, including several internally and externally funded studentships and the high-quality support provided to the unit's PhD students.

## Unit-level environment template (REF5b)

### Impact

Researchers embed the potential impact of their research at every stage, from the project proposal phase onwards. They foster long-term, bidirectional relationships with key stakeholders. Growing these relationships, prior to beginning a project, is important to ensure that a culture of trust has developed. It means that researchers truly understand the needs and priorities of stakeholders and, in some cases, can co-create research. Work can then be planned that is directly relevant to them. Researchers work with dedicated Research Impact Officers to plan pathways to impact at the first phase of the project design and review these regularly. This allows reflection on approaches and changes in responses to shifting demands. A wide variety of communication approaches is used to ensure that the research meets a range of audiences.

There are several examples of this impact strategy being successful, including, but not limited to, our impact case studies. For example, to foster a long-term partnership, **Professor Katherine Brown** worked at Public Health Warwickshire one day a week from 2014-2019. This allowed her to understand the priorities and issues the service faced. Specifically, while public health authorities were providing information on the dangers of female genital mutilation (FGM) to the public, this was not reducing rates of the practice in UK and EU communities. She sought research funding to test the use of principles from behaviour change research to redirect this information, ensuring it was tailored to the audiences. The results are detailed in the case study entitled *Tackling FGM across the EU through a Community Behaviour Change Approach*.

**Carroll** has fostered a long-term relationship with the British Dyslexia Association, having chaired their international conference in 2014 and hosted their AGM in 2019. This has allowed her to understand the pertinent issues for individuals with dyslexia which in turn has led to two PhD student projects on the socio-emotional impact of dyslexia – one the result of an internally funded studentship and the second a self-funded student. Both students were invited to present at the All-Party Parliamentary Group on Dyslexia in 2020, providing a pathway to impact of their research on future government policy.

**Jong's** work on death anxiety indicated significant benefits for individuals, having discussions with others about their beliefs and psychological preparation for death. To extend the impact of this work, **Jong** focused on different communication strategies rather than key stakeholders. He wrote for a range of audiences, from articles in *The Conversation* to a piece for BBC Bitesize aimed at young people. He has promoted debate on Twitter and even hosted a series of 'Death Cafes': events promoting conversations about death in an informal context. This approach allowed him to reach a wide cross-section of society.

As a young and rapidly growing unit, it is expected that the impacts will continue to increase over the next REF period, as current large grants are completed. The MESARCH project, for example, will come to an end in 2022; a large amount of high-quality evidence will guide best practice in sexual assault referral centres. The unit has two large-scale reading intervention projects which will end next year and which, potentially, will make significant impacts on early literacy.

### An Open Research Environment

The unit provides an open research environment for staff and research students. First, and in keeping with the principles of CU, it is believed that a crucial part of an open research environment

## Unit-level environment template (REF5b)

is making research available, relevant and useful for non-academic audiences, particularly professionals and policy-makers. The unit's way of working has been significantly enhanced to address issues that have affected the field of psychology particularly over the last decade: the reproducibility crisis.

Much of the unit's most successful work is developed with the aim of making high-quality research accessible. Often this involves providing high-quality reviews of a field of research and drawing out key-implications for practice. **O'Doherty** has carried out four Cochrane Systematic Reviews, aimed at health professionals and policy-makers (COCHRANE DB SYST REV, 2020, 7, CD013017; COCHRANE DB SYST REV, 2020, 6, CD013648; COCHRANE DB SYST REV, 2019, 11, 26, CD013456; COCHRANE DB SYST REV, 2015, 7, CD007007). The unit has also become a trusted centre of expertise in translating education and child development research into widely used, practical and accessible guidance for teachers and other education professionals: **Carroll** has led evidence reviews for the Department for Education and the Government Office of Science and Technology. In 2019, **Breadmore** led a team of CU researchers on the Education Endowment Foundation Review of literacy development.

In terms of addressing issues around reproducibility, all researchers within the UoA4 submission understand the value of an open research environment in which methods, findings and data are freely accessible and reproducibility of results is valued. This is encouraged at every level: training and support is provided to both PhD students and staff in open research methods. It is believed that this closely aligns to the ability of demonstrating high research integrity. Some of researchers have pre-registered their studies (e.g. <https://osf.io/rfy7h>) and also routinely lodge preprints of their work (e.g. <https://psyarxiv.com/j5fuy/>, <https://psyarxiv.com/qyt95/>).

The unit has played an important role in some of the largest psychology projects directly addressing the reproducibility crisis. **Sullivan** is a co-author on the paper *Estimating the Reproducibility of Psychological Science*, published in *Science* in 2015 which replicates 100 highly-cited psychological effects. **Sullivan** carried out a replication of **Tracy** and **Robins** (2008) and indicated that the results were partially replicated (<https://osf.io/9uqxr/>). **Sullivan's** team also took part in the Psychological Science Accelerator Initiative (<https://psysciacc.org/>), a globally distributed network of psychological science laboratories that coordinates data collection.

**Jong** has ensured that the datasets produced from his large-scale projects with the John Templeton Foundation have been made publicly available. His two datasets available on Nature Scientific Data have been accessed over 1,000 times each (<https://www.nature.com/articles/s41597-020-0482-y>, <https://www.nature.com/articles/s41597-019-0163-x>).

The unit also supports open publishing, using the institutional repository, but also open access journals (e.g. BMJ Open, 10, 11, 23 p., e041339; BMJ Open, 10, 12, 10 p., 34295) and in an editorial capacity. For example, **Clouder** is Editor in Chief of the *International Journal of Practice-based Learning in Health and Social Care*, a peer-reviewed, Scopus-indexed journal. The journal is financially supported by the University and is both free-to-publish and free-to-read.

## Research Integrity

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As much of the unit's work involves vulnerable individuals and sensitive topics, it is crucial that the highest standards of research integrity are being upheld. All research conducted, whether using primary data or secondary data, is reviewed through the University's Ethics Committee before commencing. In addition, all research staff take on roles as peer reviewers for the Ethics Committee and take part in regular ethics training. This ensures that all staff know the ethics guidelines and are aware of changes to rules of conducting research, e.g. in 2018, when the General Data Protection Regulation (GDPR) was introduced, or, in 2020, when face-to-face research was halted due to Covid-19.

The unit values participants' privacy and ensures that any data they provide is kept secure. Various projects have required external agencies, including the police, the NHS and third sector, to be able to share personal and sensitive data with researchers. IT Services has identified a range of secure solutions, including optimising the collaborative possibilities of SharePoint for Research and has delivered bespoke solutions. They have also worked with external service providers to optimise systems for tracking thousands of research participants. Legal Services have also played a key role in the work of the Abuse and Trauma group, having set-up around 100 data sharing and collaboration agreements for partners and research sites. They have helped to design consent forms for the Lived Expertise team to contribute to the production of media materials and advised on complex aspects of GDPR as it applies to the acquisition of service user data directly from NHS and non-NHS sites.

## Our future objectives

Psychological science is increasingly important in every area of research that addresses human factors. The world is becoming aware that new advances in medicine, education and technology are unlikely to achieve their potential unless they are developed with a thorough understanding of how people think, learn and react, individually and within groups. As described in the Institutional Environment Statement, the University is developing a series of research institutes containing multiple research centres. Psychologists will play key roles in many of these research institutes, ensuring that psychological factors are addressed across the University's research profile.

It is also important to support psychologists to maintain links with one another and with their discipline. As psychology is a young and rapidly developing field, the researchers will ensure that psychology research continues to be highly rigorous, with psychologists having opportunities to develop theory and practice in psychology as a discipline and to use psychology to inform trans-disciplinary research. To do this, the unit will increase the links between PSBS and the research centres. A central link between PSBS and the research centres is the Associate Head of School for Research, **Dr Sam Oxford**. His role is to facilitate PSBS staff to become independent researchers in the future. The unit will support this by building bidirectional links between the research centres and PSBS and by implementing an Academic Support Programme in Research Excellence (ASPiRE), suitable for Early Career Researchers (ECR).

These twin approaches will allow the unit to achieve the ambition to increase the quantity of excellent and impactful research and address key challenges, including the United Nations' SDGs. The unit will continue to build an international reputation for integrating psychological expertise in high-quality, challenge led research, to increase its funding levels further, in order for research centres to move to being financially self-sustaining.

## 2. People

### Staffing strategy

Early in this REF cycle, the University funded strategic recruitments to build on the areas of research strength. The strategy has been to recruit and develop those researchers with a potential to carry out world-class work, showing a clear alignment with the areas of strength and a commitment to the ideals of the psychology unit. Eight of the 11 staff of UoA4 have been recruited during the current REF cycle, giving an indication of the University's investment in new staff. Many of these staff members come from traditionally, research-intensive universities in the UK, including the University of Oxford (**Farias, Jong**), the University of Warwick (**Carroll, Breadmore**) and the University of Birmingham (**Wright**). In some cases, the investment allowed the unit to recruit pairs of researchers who were already collaborating with one another (e.g. **Farias and Jong; Carroll and Breadmore**) which allowed the unit to move quickly to large-scale research.

Researchers were recruited at every phase of their development, from early career researchers to senior staff which is important in securing the sustainability of the unit. The youth of the unit's research culture is illustrated by the majority (9/11) of the researchers being aged under 50. The fact that the unit is highly regarded in terms of providing consultancy, despite its relative youth, indicates high-quality research and demonstrates the success of the approach to dedicate staff and resource to a few highly focused themes in order to develop 'critical mass'.

Several of the researchers have received internal promotion since arriving at Coventry. **O'Doherty** has been promoted from Research Fellow to Associate Professor, **Wright** from Research Fellow to Assistant Professor, **Breadmore** from Assistant Professor to Associate Professor and **Sullivan** and **Carroll** from Associate Professor to Professor.

### Staff Development

Staff development is a central tenet of the unit. Academic development and progression are assisted by mentoring, internal funding schemes, PhD studentships, identification of research funding support, training in the preparation and submission of grants and papers, research seminars and newsletters and funds for conference attendance.

As described in the Institutional Environment Statement, researchers benefit from a University-wide system which monitors staff objectives, provides feedback and records progress – CORE Clear Review. In addition to each staff member having a formal line manager, the unit uses the research teams to provide systems of informal mentoring at every career phase. Regular team meetings are held for different teams and routinely all levels of staff are invited, from PhD students to professors. These are a forum for discussing ideas and research findings, but they also provide an insight for more junior members, illustrating how more experienced staff deal with the challenges that are part of the research process; staff are encouraged to discuss setbacks as well as successes. All staff members and PhD students are expected to present or lead discussions at least once during the year, thereby developing presentation and leadership skills in a low-stakes, informal, yet academically rigorous environment.

The unit enables promising individuals to progress to the next stage of their career. All undergraduate psychology students complete a work experience module and each year several

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students work with the unit. A number of successful PhD students began as undergraduates on work experience (e.g. **Parminder Khela, Jodie Enderby**). Conversely, successful PhD students have gone to work as researchers in the unit or as lecturers in PSBS after completing their doctorate (e.g. **Katherine Hall**). The dynamic changes at Coventry over this REF period have inevitably led to changes in staffing, with both the unit and the University being proud of how early career support has been a springboard for many into their first permanent lectureships (e.g. **Dr Sarah Cassidy, Dr Emily Burdett**, the University of Nottingham; **Dr Emma Vardy**, Nottingham Trent University).

As described in the Institutional Environment Statement, formal staff training at all levels is provided by the Centre for Research Capability and Development (ReCap) and unit staff have benefited from this. For example, in 2019 **Breadmore** completed the Aurora programme aimed at supporting women in developing leadership skills and, within a year of completion, she had been promoted.

In addition to the formal support from their line manager, and the informal support provided through their theme membership, all staff can avail of an institutional research mentoring scheme, coordinated by ReCap, which provides guidance for early and mid-career researchers from a senior researcher who is not their reporting manager.

## Support for Early Career Researchers (ECRs)

The unit provides a supportive environment for ECRs, with close knit teams and a matrix management structure.

ECRs are encouraged to develop their own research interests in addition to collaborating with more senior colleagues and to take the lead in smaller scale projects, leading to larger projects. **Wright** works in the cognitive neuropsychology of ageing and has an interest in the role of sexual activity in preventing cognitive decline. She received an internal pump priming award of £5,000 in 2015 which gave her the opportunity to act as the Principal Investigator (PI) for the first time, allowing her to develop key research skills, including project management, budgeting, networking and stakeholder engagement. She published a paper based on this work and made a further grant application working with the network she had developed. Owing to the widespread media coverage of her research, she had developed new collaborative partnerships with public health researchers at the University of South Carolina (USC). With these colleagues, **Wright** initiated the development of a collaborative Online International Learning (OIL) course for students at Coventry and USC. In 2017, she received an internal incoming mobility grant for these researchers to visit her in the UK. The visit fell during **Wright's** maternity leave and she was encouraged to use flexible 'keeping in touch' days to facilitate the visits. This ensured her academic profile was not negatively affected by her maternity leave. The resulting OIL course runs annually. In this way, high-quality research, engagement and career development has been facilitated through the unit and University's flexible and responsive approach.

The unit uses internal funding and team-based supervision to support ECRs to supervise PhD students effectively. Staff members have benefited from 'Trailblazers', a scheme providing funded studentships, supervised by promising ECRs and mentored by a more senior member of staff. **Cassidy** received in 2015 £4,000 as an ECR to support a study of sensory and motor differences in developmental disorders. This led to a PhD studentship supervised by **Cassidy** and multiple

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successful publications (FRONT NEUROL, [10.3389/fneur.2016.00124](https://doi.org/10.3389/fneur.2016.00124); MOL AUTISM, 10.1186/s13229-016-0112-x).

Research centres also run a series of seminars with a mixture of internal and external speakers and each theme receives annual funding, enabling academics to travel to national or international conferences.

**Procedures to stimulate and facilitate exchanges with non-academic bodies**

The unit has developed a range of partnerships with non-academic bodies which often take the form of consultancy. Given the focus of UoA4's work, these are usually non-profit organisations such as charities or government bodies. In many cases, researchers are invited to undertake consultancy work repeatedly from, e.g. Hodder Education, the Education Endowment Foundation and the Higher Education Funding Council for England. These are facilitated by CU Services Ltd, which delivers and manages the University's commercial contracts and provides efficient and flexible support with bid writing and management.

**Research Students**

The unit provides a challenging, yet flexible and supportive environment for its PhD students. This is reflected in the high rates of retention and completion: only three of 61 registered PhD students have withdrawn over the REF period and 44 PhD students successfully completed over that period.

All research students are assigned a Director of Studies (DoS) and a supervisory team consisting of at least three colleagues from a range of backgrounds to embed trans-disciplinary working. This team-based supervision model also allows more junior members of staff to become experienced in PhD supervision under the guidance of more experienced colleagues. The University requires at least three successful PhD completions across a supervisory team, meaning that no PhD student is supervised by an inexperienced team. Supervisors are also expected to have completed the CU Doctoral Supervision Programme run by ReCap. Further training is available for more experienced supervisors who can go on to take part in *viva* examinations.

An annual review is held for each PhD student during which a subject expert assesses student progress and both student and supervisor give their views privately on the supervisory arrangements. This provides an excellent way of monitoring student progress and dealing with issues around supervision before they cause major problems. Each research centre has a member of staff responsible for research students and they form a point of contact for any issues. The unit's research students are also supported by the University's Doctoral College, who organise annual reviews and provide training and events for students.

Our research students are embedded within the centres as members of staff with the necessary support made available to them. They have access to desks in the main open plan offices alongside the staff members and have monthly informal meetings to discuss issues that arise with a dedicated staff member who is responsible for research students. They are expected to contribute regularly to theme meetings and research seminars, fostering presentation skills, enabling feedback and preparation for both *viva voce* examinations and conferences. The PhD

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community is enhanced by regular visiting students from Brazil, Argentina, Turkey and Indonesia which helps research students and staff to build international networks.

The unit supports a diverse range of individuals to achieve PhDs. 53% of the cohort are from a Black and Minority Ethnic (BAME) background in comparison to sector averages of 21%. 55% of our cohort are aged 36 and over, compared to 27% for the sector average. In line with the sector average 57% of the cohort are female.

Some of the research students supervised by members of the unit are enrolled on the PhD programme in Global Education. This is a fully online, part-time PhD programme, aimed at education professionals currently working in schools, colleges and universities. It provides a structured and supportive approach to PhD research which is particularly useful in attracting and retaining students from diverse backgrounds. For the researchers, this is a valuable additional link with professionals working in the field of education.

### Equality and Diversity

While the UoA4 submission for Coventry University is small, it shows a positive level of diversity. 18% of the team come from BAME backgrounds which compares well to the sector average of 7%. The unit does, however, have a lower proportion of individuals from a BAME background within their staff members than in their PhD student cohort. This needs to be monitored to understand whether it is an indication of a 'leaky pipeline' or whether it is a natural consequence of demographic changes (e.g. younger UK residents are more likely to come from BAME backgrounds).

64% of the staff are female which is close to the sector average of 62%. This gender split is also consistent across different grades, with two of the three professors in the submission being female. None have a declared disability, but with the small numbers of FTEs in the submission it is difficult to conclude anything from this finding.

It is believed that these levels of diversity stem from the supportive and collaborative approaches across the unit, as well as this being a consequence of the research interests of the unit. As much of the work centres on disadvantaged or under-represented groups, it is expected that the unit's academic researchers would be likely to come from those groups. This is positive in itself: it is anticipated that seeing senior members of staff from under-represented groups will inspire more individuals from these backgrounds to go into academia and therefore the unit will become increasingly diverse over time.

## 3. Income, infrastructure and facilities

### Income

As a young and expanding unit with a focus on impactful research, there has been a clear strategy to build research income across the REF cycle. Researchers have aimed to build strong relationships with key funders and stakeholders in their particular areas of strength and have gained a reputation for producing high-quality research relevant to policy and practice. This strategy has proved extremely successful: funding has increased from £797,441 in the previous REF period to £4.2 million in the current cycle. As an indication of the unit's growth, the research

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income reported in the 2008 Research Assessment Exercise (RAE) was only £4,225, meaning that it has increased almost a thousand times in 12 years.

In many cases, the strategy has involved working closely with UK government bodies and government funded organisations, such as the National Institute for Health Research. 23% (or £970,333) of the unit's total research income comes from these sources. In other cases, relationships have been built with charitable foundations closely aligned to the unit's research aims, such as the John Templeton Foundation, the Nuffield Foundation and the National Literacy Trust. 44% of the income (£1,864,005) comes from UK-based charities. A further 10% (or £447,819) of the total research income comes from central European Union (EU) research funding.

A key partner and funder over the period has been the **Education Endowment Foundation**. The unit's focus on using psychological approaches to understand and promote educational attainments fits with the ethos of **The Education Endowment Foundation**, are a government-funded organisation focused on promoting evidence-based practice within UK schools. They have funded Coventry University to carry out four large-scale trials (Evaluating Chatterbooks, 2013-2015: £397,314; Evaluating ABRACADABRA, effectiveness trial 2013-2015: £643,467 and efficacy trial 2017-2020: £658,255; and Evaluating Peer Assisted Learning Strategies 2019-2021: £236,265) This work has been highly effective and impactful. For example, the ABRACADABRA project is highlighted as being an effective intervention for use in schools (<https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/abracadabra-abra-pilot/>) and has been rolled out in over 200 schools. This work provides a direct comparison between computer-based and teacher-led intervention and shows when content is matched, they have very similar effects overall. Given the increased emphasis on computer-based education over the past year, this is a highly relevant finding.

The Education Endowment Foundation have also commissioned the unit to lead two evidence reviews (Review of Evidence on Literacy, £28,698, Systematic Review of Attainment Measures (ongoing): £41,697). This work forms the basis of teacher guidance documents which have been widely disseminated in UK schools. It is estimated that 10% of secondary school teachers in England have used these guidance materials.

A second key funding partner has been the John Templeton Foundation and their sister foundation the Templeton World Charity Foundation, an international funding charity with interests in the scientific underpinnings of belief and religion. Again, the ethos of this foundation fits with the unit's work, in particular the focus of the Brain, Belief and Behaviour team. The John Templeton Foundation funded the Neurostimulation of Belief (£119,286) and Understanding Unbelief (£2.3m, £68,815 to CU) projects held by **Farias** and the Cultural and Cognitive Foundations of Religion and Morality project held by **Jong** (\$2.2m, £131,991 to CU). The Templeton Religion Trust have funded the Religion and the Social Brain project, on which **Farias** collaborated with **Michael Reiss** (University College London UCL) and **Robin Dunbar** (University of Oxford). This large-scale project employed a combination of field and experimental pharmacological studies to understand the sociobiological mechanisms of rituals and how these relate to religion (e.g., BIOL LETT-UK, 16, 10, 5 p., 20200485).

In line with the unit's emphasis on policy-relevant research, researchers have sought and received funding from multiple UK government bodies, including the National Institute for Health Research (funding the MESARCH project £1.3m), NHS England (£43,651), the Ministry of Justice (£89,969),

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the Department for Education (£55,970) and HEFCE (£107,725). This funding has allowed them to make significant new findings linked to current issues – for example the use of psychological behaviour change approaches used to reduce the practice of FGM as described in the Impact Case Study entitled *Tackling FGM across the EU through a Community Behaviour-Change Approach*.

As a result of the unit's strong links with organisations outside of academia in health, education and justice (as described in section 4), researchers are regularly approached to undertake consultancy work with a wide range of stakeholders including Thames Valley Police, Hodder Education, the National Literacy Trust, West Midlands Probation Service and several more. This is an important source of income for the unit, totalling £246,636 between 2016/17 and 2018/19. This consultancy work has also allowed researchers to increase the reach and impact of their research, as detailed in the impact case studies and has led to several high-quality publications.

## Organisational infrastructure supporting research and impact

Researchers within the unit have benefitted from internal research funding available through ReCap, having received over £380,000 worth of internal pump prime funding to support research projects, equipment and impact initiatives. As described above, this is particularly targeted at early career researchers to enable them to develop international networks and work towards external funding. This includes a range of schemes to strategically boost research capacity, including visiting professorships, enterprise and engagement funding, research equipment grants, staff and student mobility schemes and PhD studentships. For example, in 2016, **Breadmore** received funding of £10,484 for exchange visits with **Professor Helene Deacon** at Dalhousie University, Canada. This has led to a fruitful ongoing research partnership between the two teams, including three publications, two symposia at international conferences and co-editing special issue in the *Journal of Research in Reading*, published 2020.

The University has provided considerable support for research and researchers submitted in this Unit through the appointments of staff at all stages of the research cycle. For three consecutive years during the early phase of the REF cycle the University provided approximately an extra £1 million per annum which was mainly put in to staffing, appointing 15 new members of staff on permanent research contracts between July 2014 and March 2016.

In terms of supporting staff to procure and carry out research, there are teams of staff which assist with both pre-award and post-award activity. These staff are assigned to specific research centres, allowing them to build an in-depth knowledge of the funding area and get to know the expertise of the research teams. This ongoing relationship between researchers and support staff enables fast, yet high-quality responses to funding announcements and invitations to tender which can often be on a tight timescale. Pre-award staff support the identification of funds for research along with staff to assist in formatting, costing and internal reviewing of proposals. In post-award, staff assist in ensuring milestones are achieved and project spend is on target; they also provide funder expertise and liaison.

The University provides flexible support for the unit's research through infrastructure, equipment and computer software. In many cases, researchers are encouraged to think creatively about what elements would enhance their research and request them, rather than a top-down provision of facilities, resulting in a wide-range of support tailored to the research.

For research carried out by the Brain, Belief and Behaviour team, for example, dedicated laboratory space is provided, with equipment to assess neurological processes, including TOBI eye trackers, an EEG machine and the transcranial Direct Current Stimulation (tDCS) device. This equipment has allowed the team to carry out ground-breaking work, examining the role of inhibition and executive functioning processes on supernatural beliefs which included a double-blind brain stimulation experiment. This showed that, contrary to previous neuro-cognitive findings, supernatural belief is not modulated by intuitive thinking or cognitive inhibition ([Scientific Reports](#), 7, 15100). **Farias** and colleagues argue that the varied participants taking part in their research (including fieldwork with individuals on a religious pilgrimage) and the innovative techniques may account for the contradiction with previous work which has largely sampled US university students.

Similarly, researchers who focus on educational psychology have a need for equipment that can be used for assessing the cognitive and educational development of children and students. They have a dedicated testing library which includes a wide range of recent psychometric tasks aimed at children and adults. They also have exclusive use of an Eye and Pen system for online analysis of writing behaviour and an Eyelink 1000 plus, a highly precise and accurate eye tracker ideal for monitoring reading behaviour in real time.

Much of the unit's research involves co-creation or interaction with participants who are unfamiliar with a university environment. Some of whom will be vulnerable or anxious and disclose sensitive information. Accordingly, the unit's researchers are provided with a safe environment for conducting their research, either face-to-face and over the phone; e.g. sound-proofed dedicated spaces for data collection, secure and encrypted dictation devices and mobile 'phones for each staff member liaising with agencies and members of the public. The unit also places great importance on the creation of a welcoming yet professional environment for visitors which has required strategic investment in infrastructure and included the refurbishment of the research space. Researchers ensure that visitors have a reserved parking space, that relevant staff are available to assist in reception areas and that individuals with disabilities can access meeting spaces easily.

An important element in the growth strategy was to develop national and international collaborations. The University has also ensured that the unit is well equipped to host these collaborations, with access to board room style spaces, in-house catering and facilities for video/teleconferencing. Given CU's central geographical location, the unit is ideally placed to host multi-disciplinary meetings, for example the British Dyslexia Association AGM in 2019.

The use and acquisition of research-relevant software packages is managed by IT Services through their AppsAnywhere service. A wide range of software is available through this service (e.g. SPSS, AMOS, RefWorks, NVivo, R), with further software being available on request (e.g. M-Plus, Endnote). This approach supports flexible working, with users being able to access software on and off campus, crucial during the lockdown of 2020 and 2021.

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

##### **Effectiveness of Research Collaborations, Networks and Partnerships**

## Unit-level environment template (REF5b)

A significant feature of the University's research strategy is the emphasis on collaboration both within the academic community and with external partners. In some cases, research exchanges have been funded internally (as with **Breadmore's** successful collaboration with Dalhousie University detailed above). In others, they have been facilitated by external networking grants. For example, **Clouder** has worked on a series of ERASMUS and ERASMUS+ programmes (SWING, PACES and MUSE) with a wide range of international partners, culminating in her current work leading the ENTENDER partnership with collaborators in Mexico, Argentina, Italy, Greece and Spain. She also leads a second networking grant linking universities across the ASEAN region (Philippine Normal University (Philippines), Universitas Kristen (Indonesia), Universiti Pendidikan Sultan Idris (Malaysia), Phu Xian (Vietnam), The Vietnam National Institute of Educational Sciences (Vietnam)).

The unit has ongoing joint PhD agreements with Aarhus University (Denmark) and with the Donders Institute at Radboud University (Netherlands). The unit's first research student from this latter partnership (**Ivana Buric**) has recently completed her studies and shortly afterwards was awarded an individual Marie Curie Fellowship to continue her research at the University of Amsterdam.

Some colleagues have served as visiting professors or research fellows internationally, demonstrating their international reputations. **Farias** is an Honorary Research Fellow at the Institute of Psychology, University of Sao Paulo (Brazil) and has been a Visiting Professor at the Medical School, Universidade Federal de Juiz de Fora and at the Catholic University of Brasilia (Brazil). **Carroll** has been a Visiting Professor at the Beijing Institute of Science and Technology (China). **O'Doherty** is an Honorary Fellow of The Melbourne Medical School (Australia). **Tramontano** was a Visiting Professor at the University of Florence (Italy) from 2018 to 2019 which led onto a collaboration with the National Institute for the Evaluation of the Education System (INVALSI) in Italy, working on secondary data analyses of large-scale international education surveys such as ICCS and PISA. In the next round of PISA data collection, **Tramontano's** measures on bullying and cyberbullying will form part of the national assessment in Italy.

**O'Doherty** has forged strong connections with the third sector and statutory agencies, with national and regional level partnerships and agencies such as Rape Crisis England and Wales, NHS England and NHS Improvement (NHSEI), the Survivors' Trust, Leicestershire Police, NHS trusts, Coventry Haven Women's Aid. This enhances the feasibility and impact of her programme of research into domestic and sexual abuse. She has carefully grown these links using Coventry University as a springboard, securing non-academic partners as co-investigators on successful grants (e.g. on [the MESARCH project](#)).

By treating experience as a form of expert knowledge, **O'Doherty's** involvement with the MESARCH project is leading advances in Patient and Public Involvement, in the sphere of trauma and abuse. Authentic participation of survivors gives rise to co-produced knowledge (<http://mesarch.coventry.ac.uk/patient-and-public-involvement/>). Members with lived experience can act as a sounding board, share decision-making and help to ensure the project is conducted to the highest standards in terms of inclusivity, justice and safety. These elements are integral to successful research in mental health and similar settings where people's voices have been largely unheard due to dominant institutional and social forces at play.

## Unit-level environment template (REF5b)

Advisory board membership has allowed connections to flourish. **Professor Sarah Brown** (unit member 2014-2019) served on the advisory board for the Centre for Expertise for Child Sexual Abuse. **O'Doherty** serves on regional boards to implement NHSEI's strategy to improve care pathways for survivors of sexual abuse and violence. She utilises this as one avenue to channel regional and national data from her research programme. **Carroll** and **Breadmore** have served on teacher guidance advisory panels for the Education Endowment Foundation to provide guidance disseminated to every school in the UK.

The work in the unit has had far-reaching impact beyond the examples highlighted in the impact case studies, often highlighting ways in which services can support wellbeing and safeguarding for the most vulnerable. Over the past seven years, for example, **O'Doherty** has worked on several Cochrane Reviews, including ones on psychological and psychosocial therapies for women who experience intimate partner violence and sexual abuse and on screening for intimate partner violence in healthcare settings. This final review indicated a need for screening for intimate partner violence during pregnancy and has been highlighted in World Health Organisation antenatal guidance (<https://www.who.int/publications/i/item/9789241549912>).

**Dr Sarah Cassidy**, unit member 2014-2017, received an Economic and Social Research Council (ESRC) Future Leaders Fellowship while at Coventry University that was key to her developing a fruitful ongoing relationship with the charity Autistica. As a result of this partnership, **Cassidy** demonstrated for the first time that individuals with autism were at an unusually high risk of suicide (LANCET PSYCHIAT. 1, 10.1016/S2215-0366(14)70248-2). She went on to co-create research with autistic adults, allowing her to detail the risk factors around suicide for this group (MOL AUTISM, 10.1186/s13229-018-0226-4). This led to a national campaign to address preventable deaths in individuals with autism (<https://www.autistica.org.uk/downloads/files/Personal-tragedies-public-crisis-ONLINE.pdf#asset:1499>).

## Engagement

As a young University in the centre of a diverse city, Coventry University has always regarded regional and national engagement as an important element in its mission.

Regional engagement often focuses on local families. For example, the unit took the lead in organising Coventry Young Researchers between 2015 and 2018, an event for local families with school-aged children. At this event, children and parents were able to take part in various ongoing experiments and learn about the science of psychology. Each year, over 200 children took part over five days and feedback from these events was overwhelmingly positive. The events also provided an effective way of collecting research data over the quiet summer period and extremely useful experience for the PhD students and early career researchers who took the lead on co-ordinating different aspects of the project each year.

The unit's work has regularly attracted media attention; an example being **Farias's** pioneering work on the effectiveness and limitations of meditation and mindfulness which includes his 2014 book *The Buddha Pill* - revised and updated in 2019 - and his 2018 systematic review (ACTA PSYCHIAT SCAND. 142, 5, 374-393). Both have been widely reported in the media. This work argues that practices such as meditation and yoga can in some cases have negative or harmful effects, particularly when implemented without their spiritual and philosophical underpinnings and that they should not be viewed as a panacea.

**Wright** has produced a series of high-profile studies which indicated that older adults who reported regular sexual activity showed cognitive benefits. This work caught the attention of a wide cross-section of the media, and, as a result, **Wright** developed online learning materials on how to engage with the media responsibly.

The unit's contribution to the sustainability of the discipline is demonstrated by its membership on various boards and committees, including the International Association for the Psychology of Religion, the British Psychological Society (BPS) Political Psychology section, the BPS History and Philosophy of Psychology section, the BPS Psychological Government programme and the Society for Scientific Study of Reading.

Staff members have played significant roles in organising conferences: **Sullivan** organised the International Society for Theoretical Psychology annual conference in 2015 (300 attendees), while **Carroll** chaired the British Dyslexia Association International Conference in 2014 and was Vice-Chair in 2018 (400 attendees on each occasion).

## Wider Influence

### Awards

- **Farias** won the 2017 William Bier Award from the American Psychological Association, Division 36, in recognition of his contributions in the psychology of religion and spirituality and public engagement.
- **Carroll** won the 2018 British Dyslexia Association Lifetime Achievement Award in recognition of her contributions to understanding and supporting dyslexia and dyslexic individuals.

### Editorial Responsibilities

- Editor-in-Chief of *Journal of Research in Reading* (**Carroll** 2014-2018)
- Editor-in-Chief of the *International Journal of Practice-based Learning in Health and Social Care* (**Clouder**)
- Associate Editor of *Journal of Research in Reading* (**Breadmore** 2017-present)
- Editorial Board Memberships: *PLOS One* (O'Doherty), *Scientific Studies of Reading* (**Carroll**), *Child Abuse and Neglect* (**Tramontano**).

Members of the unit have given invited keynote lectures at the following conferences:

- International Education Conference, Bandung, 2019
- British Dyslexia Association Conference, 2014
- Forum for Research in Literacy and Language, 2018 and 2019
- British Association of Applied Linguistics, 2019
- The Dyslexia Show, 2020; National Association of Disability Practitioners, 2017 and 2018

Researchers have also provided keynote lectures at the following universities:

- Leuven University, Belgium
- Philippines Normal University, Philippines
- International Psychoanalytic University, Germany
- Edge Hill University, UK
- Nottingham Trent University, UK

**Unit-level environment template (REF5b)**

- Royal Holloway, University London, UK
- University of Dundee, UK
- University of Worcester., UK

The unit's researchers provide reviews for a wide range of funding bodies, including:

- ESRC
- Medical Research Council (MRC)
- National Institute for Health Research (NIHR)
- Arts and Humanities Research Council (AHRC)
- Nuffield Foundation
- John Templeton Foundation
- Polish Science Foundation
- British Council
- British Academy
- Social Sciences and Humanities Research Council Canada.

Reviews for numerous high-quality journals, including:

- *Psychological Science*
- *Developmental Science*
- *Journal of Child Psychology and Psychiatry*
- *Cognition, Political Psychology*
- *Journal of Community and Applied Social Psychology*
- *Theory & Psychology*
- *Quarterly Journal of Experimental Psychology*
- *Child Development, Annals of Dyslexia*
- *Journal of Research in Reading*
- *Research in Developmental Disabilities*
- *Rehabilitation Process and Outcome*
- *Contemporary Educational Psychology*
- *Developmental Psychology*
- *PLOS ONE*
- *Applied Psycholinguistics*
- *Journal of Experimental Child Psychology*
- *Dyslexia*
- *Journal of Child Language*
- *Adolescent Psychiatry*
- *Scientific Studies of Reading*
- *Frontiers in Psychology*