I am very proud to present the first annual report for the Centre for Behavioural Science and Applied Psychology (CeBSAP) 2018/19. CeBSAP aims to apply contemporary psychological theory, using innovative and diverse methods, to provide real-world solutions to issues of well-being, health, social inclusion, cognition, and behaviour change. It has been a really exciting year.

Our year started with the excellent news that we had been successful in our bid to conduct some behavioural insights research as part of Doncaster Council’s Local Delivery Pilot, Funded by Sport England to address low levels of physical activity. We have used behavioural science theory and a methodology in which members of the community undertook qualitative research for this work and we are about to start the next phase - where we are working with members of the community to co-design solutions. This has been a fascinating project that has led to some significant insights about barriers to physical activity in people living in disadvantaged communities.

In October we held our internal launch poster event which was attended by academics, researchers and students from across the University. It was fantastic to see so many people reading the posters, asking questions, and gaining a better understanding of the research that we do.

In November Prof Ann Macaskill led a research trip to Thailand. Funded by the British Academy and a Newton Fellowship grant this work aimed to assess and improve Health Literacy and Wellbeing in Thai families at risk of Non-Communicable Diseases.

Our work has also had press attention. Our comics research group led by Dr Paul Aleixo had two articles in the Conversation, about the role of comics in education and Paul was interviewed on BBC Radio Sheffield. Dr Alessandro Soranzo also co-wrote a piece in the conversation about the way in which Leonardo da Vinci used visual illusions in his paintings.

We held a really successful research seminar series this year. A particular highlight for me was Dr Jamie Ward who talked about the science of synesthesia - where people experience a cross-over in their senses so that they smell words, or see colours associated with letters. Another highlight was Dr Jo Hart and Dr Lucie Byrne-Davies from University of Manchester, our Behavioural Science Consortium partners, talking about their ‘Change Exchange’ work which uses behavioural science to address health professional behaviour in developing countries. Our own CeBSAP researcher, Dr Martin Lamb, is currently in Ghana working alongside Jo and Lucie on a project looking at health professional behaviour change in relation to the challenge of antimicrobial resistance.
We have lots to look forward to. On 13th June 2019 there will be an event to share the findings of the Cog-LAB project which profiles a new cognitive assessment tool developed by Dr Lynne Barker. The day will also feature Dr Nick Morton talking about the problems associated with neuropsychological assessment. On Friday 28th June we have our external launch event: A conference showcasing the work of CeBSAP which includes practical workshops about behavioural science, neurocognitive testing and a number of applications of psychological theory and methods, with a keynote presentation by Dr Tim Chadborn, Lead for Behavioural Insights and Evaluation at Public Health England. We hope that this event will give attendees an insight into the work that we do and how this can be applied in a range of different settings, including health, government and the public and voluntary sectors, education, policing, and business.

Here follows a summary of the activity of CeBSAP during 2018/19. We hope that you find it interesting and informative and will contact us to discuss if you think we can help you or your organisation or business. We also hope that you will join us for some of our future events.

Professor Madelynne Arden
is the Director of Centre for Behavioural Science and Applied Psychology (CeBSAP),
Project Director for the Behavioural Science Consortium
and Professor of Health Psychology
at Sheffield Hallam University

Keep up to date with the latest CeBSAP news:
www.shu.ac.uk/research/specialisms/centre-for-behavioural-science-and-applied-psychology

Follow us @CeBSAP
Our mission is to transform lives. We do this by creating knowledge and providing innovative, practical solutions to real challenges.

CeBSAP aims to apply contemporary psychological theory and behavioural science to issues of wellbeing, health, social inclusion, cognition and behaviour change. We provide access to leading academics and researchers and undertake research and consultancy work with a variety of funders and clients.

CeBSAP’s areas of expertise include:

- Developing interventions focused on behaviour change and well-being based on psychological theory and behavioural science
- Using non-invasive neuro-cognitive testing to explore impairments to the brain and the resulting changes to cognition and behaviour
- The application of psychological theories to provide evidence-based solutions using rigorous research methodology

We have extensive experience conducting psychological research to provide tailored evidence-based solutions. We have worked with local governments, police forces, social services, schools, charities and commercial organisations.

We have expertise in a wide range of research methods:

- Quantitative methods including: randomised control trials, multi-level modelling, questionnaire and survey design, psychometric testing
- Qualitative and mixed-method approaches including: interviews and focus groups, IPA, narrative approaches, discourse analysis, thematic analysis, framework analysis
- Our laboratory facilities include: Eye tracking, EEG, visual perception, retinal imaging, video suite, and focus group and interview facilities.
The Centre for Behavioural Science and Applied Psychology (CeBSAP) has been involved in a wide variety of events from seminars to conferences.
October 2018 saw the internal launch of CeBSAP. The event provided an opportunity for members of staff across the University to find out more about CeBSAP and the research being conducted across the centre.

Professor Maddy Arden (Director of CeBSAP & Project Director of the Behavioural Science Consortium) opened the centre alongside Professor John Reidy (Head of Department for Psychology, Sociology, & Politics) and Professor Chris Wigginton (Pro-Vice Chancellor for Faculty of Social Sciences and Humanities)

The opportunity was used to announce the success of recent bids that CeBSAP have recently won (https://getdoncastermoving.org/ldp)
Over 20 research posters were on display covering the research being conducted by members of the CeBSAP team. The research topics showcased the wide range of work, and included:

- Developing behavioural interventions to: improve adherence to medication in long-term conditions, reduce children’s dental anxiety, reduce workplace sedentary behaviour, improve the effectiveness of alcohol warning labels

- Development and/or evaluation of: computer based assessment of cognition in neurological groups, self-report tools to assess vulnerable adults needs, medical devices to diagnose and treat sleep disorders

- Understanding: language, sleep, memory, vision, well-being, doping behaviour, taste perception…and lots more!

Demonstration of Cog-LAB presented at the internal launch
Festival of Social Science

In November, Sheffield Hallam University and the University of Sheffield jointly curated a series of free public engagement events as part of the ESRC Festival of Social Sciences. CeBSAP was involved in a number of events.

Professor Maddy Arden presented research from behavioural science on the power of habits to drive and maintain behaviours, including why it can be difficult to make changes to our behaviours using will power alone. The session included a practical workshop where people could learn how to make personal plans for the changes they wanted to achieve.

Cross-government Behavioural Insights conference

In January Professor Maddy Arden joined colleagues in London to represent the Behavioural Science Consortium on a discussion panel at the Cross-Government Behavioural Insights Conference.

The emphasis of the conference was the growing impact of behavioural science across Government. As one of the six providers on the new Behavioural Insights Framework (and the only University supplier) Professor Maddy Arden discussed the need to consider how many behaviours (e.g. healthy eating) are very complex and so we need to make sure that we really understand the challenges, including what needs to change, before designing interventions to address it.

Civil Service Live

Civil Service Live 2018 is a learning event, bringing together influential figures from across the Civil Service, the wider public sector and the private and voluntary sectors.

These events enable civil servants to engage with colleagues from across all departments, as well as with industry experts and private sector organisations, through a variety of sessions and activities, including keynote addresses, workshops, networking, advice clinics and spot mentoring.

Prof Maddy Arden attended Civil Service Live on Wednesday 13 June 2018 at NEC, Birmingham to give a workshop entitled ‘Improved outcomes using behavioural insights’ which was attended by around 50 civil servants. The workshop introduced attendees to the Capability, Opportunity, Motivation model of behaviour and explored how this model might help to address key change issues in the workplace.

Feedback from the session was very positive with 100% of people agreeing or strongly agreeing to being happy - making it the most successful one that day!
CeBSAP host a monthly seminar series and we have been delighted to have hosted a range of talks on behavioural science and applied psychology from experts from across the UK.

### Seminar topics in 2018 - 2019 included:

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<thead>
<tr>
<th>Topic</th>
<th>Speaker(s)</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Illness perceptions in people with chronic kidney disease</td>
<td>Dr Joe Chilcot: Kings College London</td>
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<tr>
<td>Applying behavioural insights in global health: co-development,</td>
<td>Dr Jo Hart &amp; Dr Lucie Byrne-Davis: The University of Manchester</td>
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<td>impact and challenges</td>
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<td>Reframing Obedience</td>
<td>Dr Stephen Gibson: York St John University</td>
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<tr>
<td>The importance of sleep</td>
<td>Dr Anna Weighall: The University of Sheffield</td>
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<tr>
<td>What can synaesthesia tell us about the normal mind and brain?</td>
<td>Prof Jamie Ward: University of West Sussex</td>
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<td>Weight-related communication in primary care</td>
<td>Dr Joanne Cecil: University of St Andrews</td>
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<tr>
<td>Nature Connectedness: why it is important and how do you increase it?</td>
<td>Prof David Sheffield: University of Derby</td>
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Prof Jamie Ward discussed synaesthesia, including this map on the tastes of each of the London Underground stations experienced by one synesthetic.

For further information about our seminar series and to sign up to our mailing list, please email: cebsap@shu.ac.uk
Using Behavioural Science to Understand and Prevent Drug Use in Sport

The use of performance-and-appearance enhancing drugs (PAEDs) is an ongoing and multifaceted problem both in amateur, grassroots and elite sport. Research conducted by Dr Lambros Lazuras, Reader in Social Psychology in CeBSAP has focused on the different aspects of PAEDs use in sport, from athletes’ attitudes towards anti-doping policies, to the social and psychological drivers of PAEDs use across levels of sport and age groups.

Dr Lazuras has received funding from the World Anti-Doping Agency, the International Olympics Committee and the European Commission (Erasmus+ Sport) to develop and evaluate a range of education-based interventions against PAEDs use in sport. Those interventions target athletes, coaches and other sport stakeholders and policy-makers from across Europe. In 2019 Dr Lazuras was awarded funding from the European Commission to lead Project IMPACT, an innovative project that will create, for the first time, Communities of Practice for Clean Sport Education in 6 European countries. IMPACT will build communities of sportspeople, coaches, educators and policy-makers and learn them how to effectively use the existing knowledge and resources to prevent drug use in sport.

You can find out more about this research in the following websites:

Project WHISTE: Promoting whistleblowing against doping in sport: https://sportwhistle.eu/


Project CSI: Enabling coaching education against doping and sport corruption: http://csi.phed.auth.gr/

Project GAME: Developing serious gaming application to promote clean sport education in young people: http://projectgame.phed.auth.gr/

You can also read more about this research in the following paper:
The Comics Research Group within CeBSAP consists of three core members: Dr Paul Aleixo, Dr Jane Morgan and Dr Diarmuid Verrier, who carry out research into the educational benefits of comics and their psychological properties.

The Comics Research Group has three main projects currently ongoing:

1. The first involves further research into our initial findings that presentation of educational material in comics format improves memory and comprehension compared to other mediums.

2. We are also investigating how readers read comics using eye-tracking equipment to measure scan paths and viewing times.

3. Finally, we are interested in how readers infer meaning in comics, including how the passage of time and movement are perceived.

You can find out more about this research in the following articles:

The benefits of comics in education:

How the Tintin books could be used in educational settings:
Supporting self-management in people living with HIV

Professor Maddy Arden and Dr Martin Lamb have been working with colleagues in the Faculty of Health and Wellbeing at SHU to research the impact of co-morbidities on quality of life in people living with HIV.

The CeBSAP team are providing behavioural science support and expertise to explore how people living with HIV receive treatment for their comorbidities, as well as what can be done to reduce the impact of these comorbidities and improve quality of life. Martin is also working on an additional HIV project in partnership with the Faculty of Health and Wellbeing and Sheffield Teaching Hospital. The project is funded by Gilead and aims to design and test a pilot intervention aimed to re-engage people with HIV who have stopped their medication.

Reducing Dental Anxiety in Children

Dr Jenny Porritt is a CeBSAP Health Psychologist and was part of a multidisciplinary team that developed the first evidence-based self-help CBT guide aimed at reducing dental anxiety in children aged 11-16 years old.

A series of self-help resources (paper based and online https://lltf.com/home/dental-anxiety/) were developed for children, their parents and dental professionals. The evaluation revealed there was a significant reduction in dental anxiety and increase in health-related quality of life following use of the CBT resources. The child dental anxiety guides have been approved by the British Society of Paediatric Dentistry (BSPD) and were second place in the BSPD Outstanding Innovation Award 2017.

You can find out more about this research in the following paper:
Assessing and Improving Health Literacy and Wellbeing in Thai Families at risk of Non-Communicable Diseases

Professor Ann Macaskill, CeBSAP, is leading a research programme in collaboration with Dr Ungisnun Intarakmhang, from the Behavioural Science Research Institute (BSRI), Srinakharinwirot University, Bangkok, Thailand. This is a two-year research programme is jointly funded by the British Academy Newton Advanced Fellowship fund and the Royal Thai Research Fund.

Thai families are prone to preventable chronic non-communicable diseases, from lack of exercise, malnutrition, stress, smoking, obesity, and alcoholism. The World Health Organisation in 2014 identified developing health literacy (HL) as core to improving health and well-being. HL is defined as ‘cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health’. A culturally relevant and comprehensive measure of health literacy and health behaviour was developed and then used to survey over 2,000 families in areas previously identified as having poor levels of HL. We have now designed and are beginning to deliver interventions based on positive psychology to develop HL knowledge and levels of self-efficacy, hope, optimism and thereby increase resilience in communities with low levels of HL.

Improving Adherence to Medication in Adults with Cystic Fibrosis

CFHealthHub is a programme of research funded by an NIHR Programme Grant for Applied Research and focuses on the development and evaluation of an intervention to improve nebuliser adherence in adults with Cystic Fibrosis (CF). Professor Maddy Arden is a co-applicant and the Behaviour Change lead for this programme.

The work was developed in several stages:
1. Qualitative research to explore the barriers and facilitators to nebuliser adherence in adults with CF
2. Iterative development of an intervention (CHHealthHub – delivered through a website and healthcare professional consultation) using patient feedback
3. Pilot feasibility trial with 64 people with CF
4. Randomised controlled trial at 19 sites in the UK with over 600 people with CF.

You can find out more about this research in the following paper:

Dr Lynne Barker, CeBSAP is leading the Cog-LAB study, which focused on the development of innovative ways of diagnosing cognitive impairment.

Dr Barker designed a task-based test for cognitive impairment that centres around a cooking simulation. This cooking task (CT) prototype named Cog-LAB has the ability to measure multiple different aspects of cognitive function at once. Forty-six non-impaired participants took part in the CT as well as various sub-tests from standardised neuropsychological tasks. They found that the CT performed well, providing a proof-of-principle that Cog-LAB could be used as a novel approach for determining cognitive impairment in head injury patients. Clinical trials are planned to assess how well CT can perform in patients with various neurological impairments, namely TBI, stroke and early dementia. This work was awarded the MEDIPEX award for NHS innovation in 2016 and a subsequent MRC Confidence in Concept grant to develop Cog-LAB.
Since 2010, the government has used **behavioural insights research** to inform policy, with an emphasis on using a strong evidence base about human behaviour to find innovative ways of encouraging, enabling and supporting people to make better choices for themselves. The **framework is available** for use by central government departments and other public sector bodies including NHS Trusts, schools, universities, colleges, local authorities and the Police and Fire Services.

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**Prof Maddy Arden is the Project Director and Sheffield Hallam University Lead for the Consortium**

For information email: behaviouralinsights@shu.ac.uk or follow us on twitter @BSciConsortium
The Behavioural Science Consortium recently won a contract through the Crown Commercial Service’s Behavioural Insights Framework, to work with Doncaster Metropolitan Borough Council to explore physical inactivity.

Doncaster is one of 12 areas in England selected by Sport England to be a local development pilot area (https://www.sportengland.org/our-work/local-delivery-pilots/). These areas were selected to explore, design, and test different projects aimed at reducing physical inactivity. The Sport England local pilot delivery approach has a strong emphasis on learning through the pilots and sharing findings with other areas of the country. The Behavioural Science Consortium has been working with Doncaster Council to explore opportunities for physical activity and design interventions to increase physical activity within the communities. The project consists of three phases; we have completed Phase 1 and 2, with Phase 3 currently underway!

**Phase 1**
We conducted a *survey* to assess the current physical activity levels of communities.

**Phase 2**
*Interviews* were then conducted with members of different communities within Doncaster, carried out by other members of their community.

**Phase 3**
We are currently *co-designing* physical activity interventions with the different communities.

The Behavioural Science Consortium will deliver key results to Doncaster Council and Sport England to aid the development of future physical activity interventions. Increases in physical activity will lead to improvements in the mental and physical well-being of communities.

***To find out more about this project***
Email us at behaviouralinsights@shu.ac.uk or follow us on twitter @BSciConsortium
Doctoral students are conducting diverse research within CeBSAP, using a broad range of methodologies.

**Research topics include:**

<table>
<thead>
<tr>
<th>Social Psychology Applied to Health</th>
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<td>Transition to Fatherhood (Suzy Hodgson)</td>
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<th>Mental Health</th>
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<tr>
<td>Mental Health in Student Populations (Lucy Cooper)</td>
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<td>Autism (Helen Basu Chaudhuri, Amanda Wilcox)</td>
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<td>Death and Bereavement (Simon Ashe, Ben Partridge)</td>
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<td>Self-Disgust (Anna Robson)</td>
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<th>Education</th>
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<td>Bilingual Lexicon (Nikki Dean Marshall)</td>
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<th>Forensic Psychology</th>
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<td>Sex Offending and Child Grooming (Sarah Wefers, Oliver Merry)</td>
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<td>Self-Harm in Secure Hospital Settings (Alexandra Rabjohns)</td>
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<th>Health Psychology</th>
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<tr>
<td>Adherence to Treatment in Cystic Fibrosis (Rosie Martin)</td>
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<tr>
<td>Exercise Support in Advanced Prostate Cancer (Rebecca Turner)</td>
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</table>

Rebecca Denniss is a Doctoral Researcher and Associate Lecturer, in the Cognition and Neuroscience Research Group. Her research aims to evaluate the efficacy of a multi-micronutrient supplement (vitamins, minerals and n-3 fatty acids) on cognitive rehabilitation outcomes in post-acute traumatic brain injury (TBI).

You can read more about this work in the following paper:

You can also find out more about this research in the following blogs:
- www.concussionalliance.org/nutrition
- www.psychreg.org/omega-3-brain
- www.psychreg.org/vitamins-mineral-brain
CeBSAP to host the PsyPag Conference

CeBSAP are delighted to host the 34th Annual PsyPag Conference at Sheffield Hallam University, on the 23rd - 26th July 2019. This year’s conference will focus on physical, emotional and mental health and wellbeing. Acknowledging the significant mental health issues faced by postgraduate students and the isolated rollercoaster ride of the PhD journey, our conference will not only provide the space to shine in a safe academic forum but will focus on the wellbeing of all those attending. For further information on PsyPAG please visit their website at www.psypag.co.uk

Last Booking Date for this Event is the 5th July 2019.
Follow PsyPag on Twitter for more updates @PsyPAG2019

PhD research presented at national and European conferences

Doctoral students have presented research at a range of conferences.

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Conference/Event</th>
<th>Year</th>
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<tbody>
<tr>
<td>Behavioural and ERP responses to stimuli that elicit lightness contrast and assimilation</td>
<td>Stephanie Acaster</td>
<td>European Conference on Visual Perception, 2018</td>
<td>2018</td>
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<tr>
<td>Toes in pies: Using interlingual homographs to explore the challenges of bilingualism</td>
<td>Nikki Dean Marshall</td>
<td>SEPEX, SEPNECA and AIP experimental European Conference, 2018</td>
<td>2018</td>
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<td>‘Crying On The Bus’: New Fathers’ Perspectives on Paternity Leave and Their Return to Work</td>
<td>Suzy Hodgson</td>
<td>SIPS PhD poster Event, Sheffield Hallam University, 2018</td>
<td>2018</td>
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<tr>
<td>Current knowledge on the differences between contact and non-contact child grooming offenders</td>
<td>Oliver Merry</td>
<td>British Psychological Society Division of Forensic Psychology Conference, 2018</td>
<td>2018</td>
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<tr>
<td>N-of-1 study on the relationship between self-report symptoms and adherence in Cystic Fibrosis</td>
<td>Rosie Martin</td>
<td>UCL Centre for Behaviour Change Conference, 2019</td>
<td>2019</td>
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PhD student Rosie Martin presents her N-of-1 study on the relationship between self-report symptoms and adherence in Cystic Fibrosis at UCL Centre for Behaviour Change Conference
Key Publications
2019


15. HODGE, Nick, RICE, Emma J. and REIDY, Lisa (2019). ‘They’re told all the time they’re different’: how educators understand development of sense of self for autistic pupils. Disability and Society.

Keep up to date with the latest CeBSAP news:
www.shu.ac.uk/research/specialisms/centre-for-behavioural-science-and-applied-psychology

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