MARCH 2011

MRC Cognition and Brain Sciences Unit

NEWSLETTER

NEWS FROM THE COGNITION AND BRAIN SCIENCES UNIT

2011: A NEW ERA FOR CBSU

In April 2011 Professor Susan Gathercole will join us as the new Director. Sue comes to us from a position as the Head of the Department of Psychology at the University of York, and her research focuses on memory (particularly working memory) and learning, in both children and adults. Sue is no stranger to the Unit having worked here for several years in the mid-80s. Sue says "It is a great privilege to take on the stewardship of the Cognition and Brain Sciences Unit at this truly exciting time in which cognitive science is generating ground-breaking advances in many aspects of health, disease and disorder, as well as in younger and older age. The mission of the CBSU over the next decade is to harness the full potential of the field to improve human health. This will be achieved through innovative cognitive theory and cognitive neuroscience of the highest quality, coupled with an ambitious translational programme dedicated to propelling its fundamental science through to practical benefits for health, medicine, and education". The MRC will be awarding Sue an MRC Research Professorship to be held at the University of Cambridge.

Other news...

WELCOME TO THE CBSU!

PhD students at the CBSU

Each October we have a new intake of PhD students here at the CBSU, coming from all over the world to perform research at the Unit and to gain their PhD from the University of Cambridge. Last year we welcomed seven new faces, including three MRC funded students, two Gates scholars and a CISS scholar. MRC funded students are fully supported through three years of study, with the places restricted to UK nationals and other EU candidates who have lived in the UK for three years prior to study. The Gates Foundation and the CISS scheme run funding awards managed by the University of Cambridge, and scholarships are prestigious and very competitively awarded. Gaining three for our students in one year is an excellent result reflecting the quality of the international students we attract to the Unit.

NEW STUDENTS AT THE CBSU

The new students are already taking part in Unit research and conducting their own experiments, working on topics as diverse as alleviation of tinnitus in cochlear implantees, word processing in autism spectrum disorders, and the impact of learning on brain plasticity.

Michael Anderson, Memory and Perception group

MICHAEL ANDERSON

Mike joined the CBSU in October 2009 from St Andrews University and the University of Oregon. Mike is a cognitive neuroscientist and studies memory and attention in humans. He specifically focuses on the role of executive control processes in controlling retrieval from memory, how people suppress unwanted memories, and the role of such mechanisms in producing both unintentional and motivated forgetting. Mike also has research interests (and theoretical work) in the cognitive and neural basis of conceptually focused selective attention, and semantic working memory. His work uses behavioural, hemodynamic (fMRI), and electrophysiological approaches. His team includes post-docs Pierre Gagnepain, Roland Benoit, and three PhD students - Chelan Weaver, Justin Hulbert and Ean Huddleston.

Nikolaus Kriegeskorte, Memory and Perception Group

NIKOLAUS KRIEGESKORTE

Niko also joined the CBSU in 2009, coming from the National Institute of Mental Health, Bethesda, USA. Niko leads the programme into object vision and population-code representation, and also researches on computational modelling of brain information processing and multivariate analysis of fMRI. His team includes post-docs Ian Charest, Arjen Alink and a PhD student, Hamed Nili.

TIME TO SAY GOODBYE!

This last year or two has seen several key members of staff retiring from the CBSU. In September 2009 Karalyn Patterson, a senior scientist here for 30 years officially retired, although she easily proves the theory that academics never retire they just move to new offices! Karalyn is now officially a Visiting Scientist at the CBSU, working at the Herchel Smith building on the Addenbrooke's site, and still carrying on the research that she pursued with such vigour previously.

KARALYN PATTERSON

In July 2010 Karalyn was awarded Fellowship of the British Academy in recognition of her outstanding work on the organisation of language and memory in adult humans, as revealed primarily by the impact of brain disease or injury, and including comparisons of English and Japanese languages.

Leaving at the same time as Karalyn and sharing a retirement party was Peter Williams, our Porter here for many years and a very familiar figure in the Unit. Peter had a varied career working for both the RAF and the local police force, retiring from both before joining the Unit 10 years ago! He is now actually retired, although being a volunteer driver for some of our associated charities and a keen panel volunteer we still see plenty of him at the Unit.

PETER WILLIAMS

IAN NIMMO-SMITH

2010 saw the retirement of Ian Nimmo-Smith, after a 40 year career here as a Statistician and Methods expert. Ian will have helped design many of the experiments we conducted over the years, to ensure their scientific rigour and statistical veracity, and has provided expert advice to several generations of young scientists passing through the Unit. He will be very sorely missed, but as with Karalyn continues working with us on many projects, and continues to supervise his PhD student, Eleftherios Garyfallidis, as he completes his studies.

And finally, we also said farewell to William Marslen-Wilson, Director of the Unit since 1997, who stood down as Director at Christmas last year. William steered the Unit through some remarkable scientific changes and also oversaw the refurbishment of the original buildings, the creation of the West Wing extension in 2001, and at the end of 2005, an MRC investment of around £1.7million in the CBSU's future with the introduction of the MRI scanner. Although stepping down as Director, William will not be retiring from research, as a recent £5 million research grant from the EU ensures that he has at least five more years of his language research work ahead of him. William and his team are now relocated to the centre of the University Department of Experimental Psychology where he will continue to be a major part of the Cambridge neuroscience scene.

WILLIAM MARSLEN-WILSON

NEWS IN BRIEF

ADVANCES IN STROKE REHABILITATION

Faster rehabilitation for stroke patients may be possible if treatments can harness the brain's natural ability to remember and store new words in its long term memory, according to scientists from the CBSU. Researchers led by Yury Shtyrov have found that after just 15 minutes of listening to a new word, the brain creates new networks of neurons to make up a long-term memory trace. This process happens far quicker than previously thought. The study complements previous research by the same group of CBSU scientists to develop a treatment called constraint-induced aphasia therapy (CIAT), in which stroke patients who suffer from chronic language problems significantly improved their ability to speak and understand language after a short series of intensive speech language therapy sessions.

MRC ANNUAL REVIEW FEATURES CBSU WORK

Shakespeare famously divided humanity into seven ages. The MRC Annual Review 2009/10, launched online last year, borrows this theme to show how MRC-funded research benefits everyone, at every stage of life. The impact of medical research begins before we are even born, through research on genetics and fetal development. It improves health across the human lifespan from infancy to old age.

Seven ages tells the stories of MRC scientists behind some of the most exciting discoveries from 2009/10 and of people of all ages who have benefited from their findings. CBSU research and scientists are featured in many of the sections, including Martin Monti on probing the boundaries of consciousness, Andy Calder on why disruptive teens don't recognise frowns and Adrian Owen on vegetative patients communicating by thought.

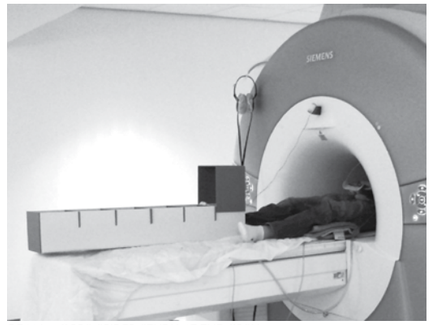
TARANTULAS HELP RESEARCHERS EXAMINE FEAR

The human brain may respond differently to threats based on proximity, trajectory, and expectations, according to a study with tarantulas published recently. Dean Mobbs of the CBSU used functional magnetic resonance imaging, or fMRI, to observe brain activity in 20 human study participants while the subjects watched what they believed to be live video of a tarantula placed near the participant's foot. Though the video actually showed previously recorded films, the subjects believed that the spider was real and placed into one of six compartments that the researchers manipulated to entice the spider to move toward or away from the subject. Participants reported their expected and actual fear experiences throughout the experiment. The results suggest that different components of the brain's "fear network" serve specific threat-response functions - information which may help researchers diagnose and treat patients who suffer from clinical phobias.

EDUCATIONAL VISIT ENJOYED BY ALL

CBSU staff recently enjoyed playing host to 25 sixth-form students who were taking part in a neuroscience residential course that took place during half term week at Villiers Park, a local Educational Trust. Villiers Park is a national charity working to remove some of the barriers that can prevent young people from making the most of the educational opportunities available to them, in particular helping young people from less advantaged backgrounds achieve their academic potential. The week long neuroscience course gave the students a great opportunity to develop an understanding of how the brain works and what happens when damage takes place, and CBSU were delighted to welcome the students for an afternoon of talks, activities and tours of the Unit, including Olaf Hauk hosting a visit to the MEG lab, as seen pictured with a willing MEG cap-wearer.

ADRIAN OWEN - TOP 100 INFLUENTIAL SCIENTIST



DEAN MOBBS SPIDER STUDY AT THE CBSU

OLAF HAUK WITH SIXTH FORM STUDENT

ADRIAN OWEN NAMED IN 100 MOST INFLUENTIAL FIGURES IN BRITISH SCIENCE

The CBSU's Adrian Owen has been named as one of the 100 most influential people in British science in the Times Eureka Science Magazine list published in October 2010. Adrian is cited for his work on neuroimaging which has allowed patients apparently in vegetative states to communicate. Adrian appears on the Times list alongside former MRC chief executives Sir Leszek Borysiewicz and Prof Colin Blakemore, plus Prof Stephen Hawking (cosmologist), Sir Peter Mansfield (co-inventor of MRI scanning), Lord Robert Winston (Broadcaster and fertility medicine pioneer) and Sir Paul Nurse (Nobel laureate and President-elect of Royal Society).

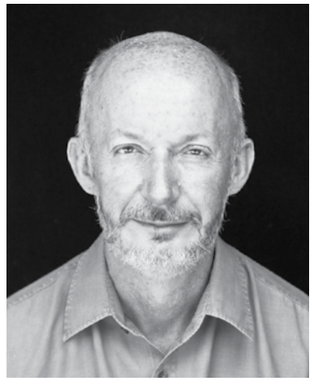
MAJOR NEW STUDY INTO BRAIN AGEING

Research efforts to understand how the brain changes with age, from early to late adulthood, have been given a major boost with the announcement of a new £5M grant from the Biotechnology and Biological Sciences Research Council (BBSRC). The funding has been awarded to a team of scientists from public health, clinical neurosciences and psychology at the University of Cambridge and from the CBSU, who aim to understand how brain ageing in healthy people affects abilities like language and memory. This team will be called the Cambridge Centre for Ageing and Neuroscience (CamCAN). CBSU scientists participating in this initiative include Rik Henson, Tim Dalgleish, Andy Calder, John Duncan, and Rhodri Cusack. Dr Rik Henson, from the CBSU, said "This is an exciting opportunity to combine the CBSU's world-leading expertise in the cognitive domains of attention, memory, language and emotion, with its cutting-edge methods for measuring the brain with MRI and MEG, in order to understand how the structure and function of the brain changes over the adult lifespan; in particular, the extent to which the brain's plasticity allows it to reorganise functionally in order to support many (though not all) cognitive skills despite extensive structural change over the years."

CBSU SCIENTISTS SHOW THAT 'BRAIN TRAINING' GAMES DO NOT MAKE YOU SMARTER

The results of a groundbreaking scientific study into brain training were published last year in Nature magazine. The study, conducted by CBSU scientists, in conjunction with the BBC, showed that practice on brain training games doesn't transfer to other mental skills. Details of the results were also shown on BBC One in the "Can You Train Your Brain? A Bang Goes the Theory" Special. People who completed computer-based training exercises did improve at the games, but these improvements were simply due to practice and were no help to them on tasks on which they had not trained, even when they tapped into similar areas of the brain as those used during brain training exercises.

HOW INTELLIGENCE HAPPENS



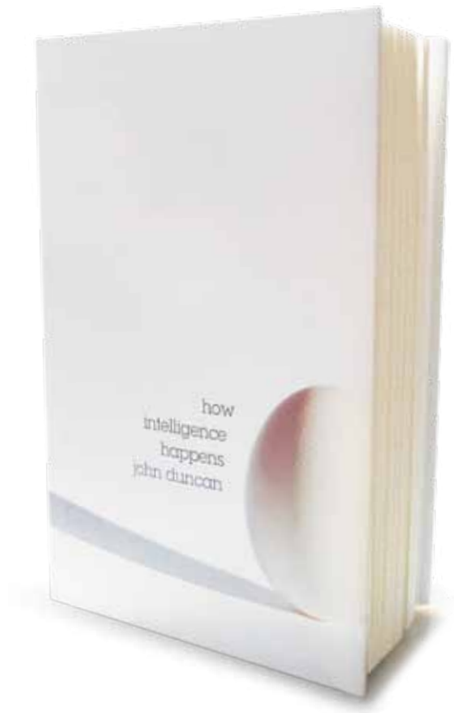
JOHN DUNCAN

In a new popular science book 'How Intelligence Happens' John Duncan, Assistant Director of the CBSU, explains the creation of intelligence in the human brain. He says: "Human intelligence has become one of the greatest forces on earth, and how it can emerge from a biological brain is one of the great scientific mysteries". In 1951 Karl Lashley, one of the fathers of modern neuroscience, looked forward to 'a physiology of logic', and in 'How Intelligence Happens', John tells the story of how this dream is beginning to be realised. The clues come from many places – the experimental psychology of intelligence testing, the study of how minds change after brain damage, the effort to build thinking computers, and modern experiments in brain imaging and neurophysiology. Putting these clues together, we see how brains break complex problems into solvable parts, assembling these fragments into the elaborate mental programs that allow us to navigate to work, conduct an argument or solve a geometrical problem. Moving from the foundations of psychology, artificial intelligence, and neuroscience to the most current scientific thinking, 'How Intelligence Happens' is for all those curious to understand how their own mind works.

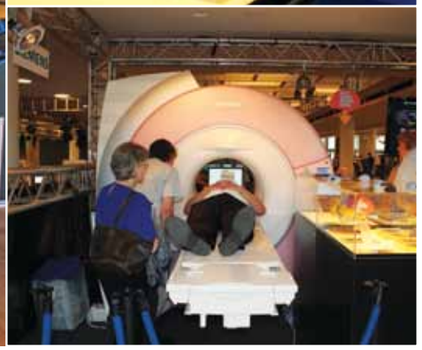
John Duncan is Assistant Director of the MRC CBSU, having been based here since 1978. Following undergraduate and graduate degrees from the University of Oxford, John has worked for more than thirty years on the link of mind to brain. His research on brain mechanisms of attention and intelligence, combining experimental psychology, brain imaging and neurophysiology, has brought awards and media coverage worldwide.

He is a Fellow of the Royal Society and of the British Academy, and holds honorary positions at the Universities of Oxford and Cambridge. He is also honorary professor of cognitive neuroscience at the Universities of Cambridge and Bangor, visiting professor at the University of Oxford, and fellow of the Royal Society and the British Academy. He is best known for his frontal-lobe theory of human intelligence.

'How Intelligence Happens' was published late last year by Yale University Press, and is available on Amazon or in good bookshops.



SUMMER SCIENCE AT THE SOUTHBANK



In July 2010 the CBSU took part in the annual Royal Society's Summer Science exhibition, the largest free science exhibition held in the country. In 2010 the Royal Society, the UK's academy of science, marked its 350th anniversary and to celebrate they hosted a major festival of science and the arts exploring our human impulse to understand the world we live in. 'See Further: The Festival of Science + Arts' was a unique ten-day festival filling every corner of the Southbank Centre in London. The festival explored links between the sciences and the arts and featured a host of cross-disciplinary collaborations, scientific and artistic events. http://www.seefurtherfestival.org/

The CBSU was thrilled to be chosen to create and host a major exhibit at the festival and many months of preparation went into creating our display "A Window on the Brain". With a full size MRI scanner loaned by Siemens and five interactive displays for people to try, a display case of brain sections and models, plus three giant screens showing documentaries of our work, the exhibit was open to the public for nine days and attracted many thousands of visitors. Scientists from the Unit were constantly on hand to give people the experience of entering an MRI scanner (and to watch a short film while inside), to guide people through the various displays and experiments, and to talk about our research. It was an exhausting but extremely rewarding experience for all involved and the CBSU was very proud of achieving such a professional and fascinating display.

The exhibit included films and experiments which we are hoping to make available on our website shortly http://www.mrc-cbu.cam.ac.uk/. The website also provides a link to Cambridge Brain Sciences, a brain testing website developed by staff at the CBSU http://www.cambridgebrainsciences.com/ where you can test your brain in the areas of memory, reasoning, planning and concentration, and which was greatly enjoyed at the Royal Society festival.

THE SCIENCE OF 'GUT FEELINGS'

How we think and feel may genuinely relate to what happens in our bodies

Barney Dunn, Emotion Group

When we talk about our emotions and decisions we often refer to our bodies – feeling broken hearted or trusting our gut instincts. The notion that listening in to our bodies can influence the contents of our minds has been around for a long time. But is there any scientific basis to this idea? Work carried out by myself and other members of the Emotion Group suggests that there might just be.

In a series of studies we have measured how well people can 'listen' to their bodies. We ask participants to try to estimate how fast their hearts are beating, which we then compare to an electrocardiogram recording of their actual heart rate. Volunteers are instructed to try to feel their heart internally and not to directly measure their pulse with their fingers. Most people feel that they are guessing on this task, and yet there are marked differences in how accurate their estimates are. Only around 20% of people perform the task accurately.

Then we went on to see whether this ability to tune into the body relates to how people think and feel. In a first experiment we tried to generate emotions in participants by showing them emotional images (like a cute puppy, a crying child, or a disgusting plate of food). We asked people to rate how they felt when viewing each image and also recorded how much their heart rate changed in response to each picture. We found that the more people's heart rate changed when viewing the images, the more they reported feeling aroused (a sense of being switched on, wide awake and alert). This relationship was much stronger in those individuals who could accurately count their heartbeats – the body does relate to our feelings but only if you tune into it.

In a second experiment participants played a card game. There was no obvious strategy to use on the game and instead players had to follow their 'instincts'. While participants decided which decision to make on each hand of the game, we measured how much their heart rate changed and how much they sweated through the finger tips. How well people performed on the game was related to the quality of advice their bodies gave them. Some people's 'gut feelings' were spot on, so they learnt the game quickly. Other people's bodily responses guided them to unhelpful choices, so they learned slowly or never found a way to win. The link between bodily responses and choices on the game was again stronger in those who could accurately monitor their hearts.

While we have to be careful drawing overly strong conclusions from these kinds of experiments, we think they provide good support for the idea that what happens in our bodies really does shape how we think and feel in our minds. Why else would how accurately people can 'listen in' to their hearts determine how much influence the body has on our choices and emotions? It also suggests that we should treat our gut instincts with a 'pinch of salt' – sometimes they help and sometimes they hinder. These findings were recently published in the journal Psychological Science and covered in some of the national and international media.

We hope that in the future this kind of work may help our ability to understand and treat conditions like anxiety and depression, a major focus of the research we carry out in the Emotion Group. Both anxiety and depression have a range of bodily symptoms – alterations in energy levels, muscular aches and pains, changes in sweating and heart rate. We have found in other studies that anxious people are particularly aware of their hearts, whereas depressed people are out of touch with their heartbeat. We are currently investigating whether these changes in bodily responding and perception contribute to the negative emotions and difficulties making decisions often found in anxiety and depression. We are also testing out whether training people to tune in and out of the body as and when needed might be helpful therapeutically.

Thanks to all of the volunteers from the panel that have assisted with these studies. Without your time and efforts (and willingness to do what might at face value seem like very strange tasks!) we would not be able to do our work.

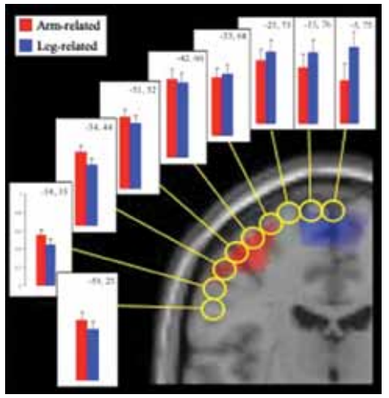
ACTIVE PERCEPTION

Brain systems for language are interwoven with those for movement and perception

Friedemann Pulvermüller and Olaf Hauk, Language Group

In their recent paper in Nature Reviews Neuroscience, Cambridge Neuroscientist Friedemann Pulvermüller from the CBSU and Luciano Fadiga at the University Ferrara address the question of how language in the brain is connected to other brain systems, such as those used in perception or for movements. Classically, it is assumed that language is an abstract cognitive function, located in specialised brain circuits that are largely independent of other – possibly simpler – brain functions. Recent neuroscientific research has demonstrated that this view does not hold any more.

In several previous studies run at the CBSU, Friedemann Pulvermüller and colleagues have demonstrated that reading sentences relating to hand ("He grasps the ball") or foot ("He kicks the ball") action activate parts of the same brain areas that would be active when the participants would actually execute the corresponding actions. This suggests an overlap of the brain systems responsible for understanding and for acting.
The authors of this paper reviewed the evidence for this view from a large range of different sources, such as neuroimaging, brain stimulation, lesion and computational studies. Recent studies could even show that movement areas in the brain activate even when we read metaphorical actions ("She grasped the idea", "He kicked the habit"), see figure right; from Boulenger, Hauk and Pulvermuller, 2009. This demonstrates that even abstract meaning can still be grounded in more basic and concrete concepts, such as bodily actions.



These findings do not only have a great impact on theories of language processing, but also offer new ways for language therapy: If language and action systems in the brain are interwoven, one may be trained to support the other when it is impaired. This principle is already used in new approaches to language therapy after stroke.

CBSU TOURS 2010 FESTIVALS

It might have seemed a tough slot to fill: a talk at 11am on a Friday morning at a summer music festival, when many of the 20,000 people who had crowded into the Cambridgeshire grounds of the Secret Garden Party were still asleep (or still awake). Neuroscientist Dr Jessica Grahn however, specializing in the study of rhythm perception and production, had no trouble holding the crowd for her entire hour on stage in a 150-capacity tent. Not only did she explain to a lay audience the complexities of our neurological hardware that allows us to process music, she also successfully united the entire audience into joint rhythms – bleary as they were - through rousing clapping.

The previous evening Dr Tristan Bekinschtein had explored the secrets of sleep and what we do (and don't) know about this most mysterious state of consciousness. Dr Tom Manly intrigued many by recreating dummy hand illusions outside the tent and left more than a few people inspired, and even a bit disturbed by new findings from neuroscience concerning how the concept of "self" is constructed in the mind. Meanwhile Dr Dean Mobbs explored our sense of fear with the audience who were then able to face up to their own fears with ex-zookeeper Tim Maynard's insect and reptile menagerie. This offered live handling opportunities with real tarantulas, bearded dragons, chameleons, snakes and insects.

And when the speaker scheduled to follow Dr Adrian Owen's slot was delayed, Adrian held the audience captive for an hour and a half with the story that had grabbed news headlines earlier in the year of how he learned to communicate with people in comas using fMRI brain scans, state of the art technology, and patience. The audience was understandably moved – some to tears, and some to interrupt Adrian as he spoke on stage – given how provocative and revolutionary his findings are. He was more than obliging, engaging in lengthy and passionate conversations with them throughout the evening.

Our scientists also had the opportunity of engaging with festival-goers on a specially built 'Guerilla Science' floating island. This intimate venue provided the chance for scientists to both do and experience public engagement with science in new ways. And in a novel approach to recording life, elements of this were captured in a short film http://guerillascience.co.uk/archives/1330 using a Sensecam, which recorded a day in the life of a scientist (Adrian Owen) at a music festival, the Secret Garden Party in July 2010, from raves to a secret island hideaway. The Sensecam is a small device worn around the neck that automatically takes a photograph every few seconds to create a continuous record of all his experiences. "Almost everything you experience is laid down in your brain, somewhere, but for the most part we can't access it," Adrian explains. The most interesting part about the Sensecam record, he believes, is what it teaches us about human memory: only the things we might want to remember are actually made available for easy access. "And this shows us how important social interactions are for constructing memories… a large component of 'memory' is what you were thinking or feeling at the time you experienced these events."

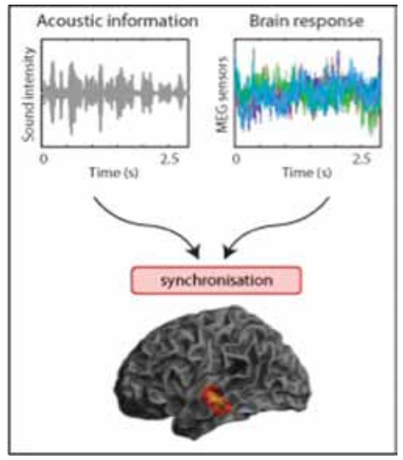
The organisation 'Guerilla Science' arranged the CBSU involvement at the Festivals and do fantastic work bringing science to new audiences in highly entertaining and innovative ways, including music festivals and arts events. http://guerillascience.co.uk/. We're currently planning our next series of appearances – do come and say hello if you see us at a festival this summer.

TUNING TO THE RHYTHM OF SPEECH

Jonathan Peelle and Matt Davis, Language Group

Picture yourself seated at a large table at a dinner party, with lively conversation bouncing back and forth across the table between friends. Your brain is able to take in the sound of each voice and process the meaning of what is being said almost instantly; any slower and you would not be able to keep up with the conversation. How is it that you can accomplish this remarkable feat?

Listening to someone speak requires following along with the rhythm of their voice, something that we are generally very good at. In fact, we are expert enough at this that we can very quickly tune in to people we have never heard speak before or who speak much quicker than we are used to. One intriguing explanation for this ability is that rhythmic brain activity synchronises with the speech being heard, so that electrical brain activity remains in lockstep with the rhythm intrinsic in the speech signal.
We examined this possibility in a recent study using magnetoencephalography (MEG), a brain imaging technique that uses hundreds of magnetic sensors to detect changes in brain activity with millisecond precision.



In considering what property of the speech signal our brains synchronise to, it is helpful to consider the obvious fact that speech comes out of our mouths, and that the loudest parts of speech occur when our vocal cords are vibrating and our mouths are open.
This occurs in the middle of every syllable, and therefore approximately 4–8 times each second in normal speech. Because this low-frequency rhythm is very salient in speech, and important language elements such as words and phrases are built out of syllables, low-frequency oscillations are the first place we looked for speech-related responses in the brain.

In our recent study, volunteers were asked to simply listen to sentences, and after each one, repeat back as many words as possible. For each sentence we analysed its acoustic properties and measured the ongoing brain activity that occurred while it was being heard. We were then able to investigate whether low-frequency activity in the brain was synchronised with the low-frequency information in the sentences. We found that, indeed, listeners' brain activity while listening to speech was synchronised with the rhythm of the speech signal. Furthermore, activity was more closely synchronised for intelligible speech than speech that had the same rhythmic properties but was completely unintelligible; thus, rhythmic brain activity is associated with language understanding, and not merely the sound of speech. When we calculated where in the brain this synchronisation was happening, we found it in the left temporal lobe, near auditory cortex and in areas we know are important for understanding speech.

So, the next time you find yourself hanging on every word of a friend's harrowing tale of adventure and romance, know that it's your brain's remarkable ability to synchronise with their speech that makes this possible.

DIARY DATES AT THE CBSU

Cambridge Science Festival - A window on the brain

On March 23rd 2011 the CBSU will once again host our popular open evening of talks, demonstrations and experiments as part of the annual Cambridge Science Festival http://www.admin.cam.ac.uk/sciencefestival/. This year our event will be called "A window on the brain" and will echo some of the popular content of the Royal Society Summer Science exhibition (see earlier article), with the usual format of three short talks given by researchers at the Unit, plus an hour at the beginning to try your hand at some of our current experiments and talk to our staff and students. It's always a full house and we do have a seating limit in the Lecture Theatre so arrive early to secure your place.

British Science Festival 2011 in Bradford

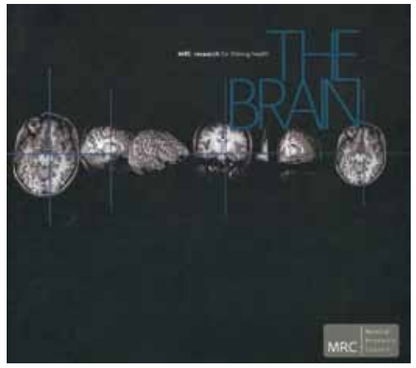
We will be appearing at the British Science Festival 2011 in Bradford from 10-15 September with our stand 'Fear, music, beat boxing and impersonation - the versatile brain!'. The BSF is a major event for the UK science world and we are delighted to have had our proposal for an exhibit accepted.

http://www.britishscienceassociation.org/web/BritishScienceFestival/WhatsOn/index.htm

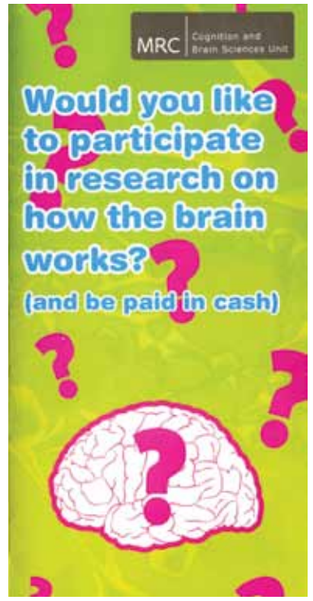
Last year the CBSU's Jessica Grahn was an invited speaker and gave a popular talk on 'Hit me with your rhythm schtick: The connection between music, movement, and the brain'. Jessica was giving the Charles Darwin Award Lecture, after receiving the award last year for outstanding skills in communication to a non-specialist audience. Her talk was complete with snatches of different rhythms, audience participation and much laughter at the antics of Snowball, a sulphur-crested cockatoo which moves rhythmically when played a favourite tune.

MRC BOOKLET FEATURES CBSU RESEARCH

A recent MRC publication in the MRC Research for Lifelong Health series is 'The Brain' a book aimed at the general public which explains what the brain is, and what we do and don't know about how it works. It describes many of the current research themes being pursued at the CBSU, and has many examples of the current work being done by our scientists. Copies are available in Reception or it can be read online at the MRC website http://www.mrc.ac.uk/Newspublications/Publications/Health/index.htm along with the other titles in this series.



VOLUNTEER PANEL INFORMATION



Research at the MRC Cognition and Brain Sciences Unit is dependent on the goodwill of members of the public who volunteer to take part in our studies of attention, emotion, memory and language. We have over a thousand volunteers on our panel, ranging in age from 16 to 80+, so that researchers at the unit can test theories about the functioning of the mind and brain, in healthy adults and following brain injury or disease. As volunteers (especially our student population) move away from Cambridge, or have less time to participate in studies, we are always in need of new members for the volunteer panel. If you have a few spare hours and would be interested in helping us with our research, we would be very grateful if you would join our volunteer research panel.

If you would like any further information visit the website www.mrc-cbu.cam.ac.uk /panel, pick up a CBSU volunteer leaflet at Reception or you can contact Rosemary Dunn, the Panel Manager, by phone (01223) 505610, or email panel@mrc-cbu.cam.ac.uk.

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