Current Projects continued...

John Baker is at work on a comprehensive description of all the patients with TEA seen since the beginning of TIME in 2003. Sharon is finalising her large scale study of outcome in TEA. Finally, we are collaborating with the geneticist John Hardy's team in London to identify possible risk factors for TEA.

Presentations

We have presented work on TEA around the country and the world: highlights have included keynote talks by **Adam Zeman** to the New Zealand Neurological Association, Sydney's NeuRA *Memory day*, and the British Neuroscience Association/ Association of British Neurologists recent *Meeting of Minds* in Cardiff, and presentations by **Sharon** at the Australian Research Council Centre of Excellence - Centre for Cognitive Disorders in Sydney, at Exeter's Pint of Science last year and this year's meeting of the British Neuropsychology Society in London.

Thanks to you

As ever, we are extremely grateful for your help with the TIME project. Without your contributions, the study would not exist. Over the past decade it has enabled us to learn much more than we knew previously about the clinical, radiological and neuropsychological features of TEA. This work has made neurologists around the world aware of TEA and has speeded the diagnosis of management of this eminently treatable condition. The TIME website continues to attract national and international enquiries. https://projects.exeter.ac.uk/time/index.php

If anyone has questions about the project, or would like us to send them copies of our papers, please let us know.

With very best wishes for Christmas and the New Year !

Principal Investigators
Prof Adam Zeman,
Prof Chris Butler,

Research Fellows
Dr Sharon Savage,
Dr John Baker,

Collaborators
Prof Sergio Della Sala,
Dr Michaela Dewar,
Prof Kim Graham,
Prof Narinder Kapur,
Prof Facundo Manes,
Prof John Hodges,
Dr Fraser Milton,

Funded by: Academy of Medical Sciences, Dunhill Medical Trust, Epilepsy Research UK, ESRC, Great Western Research, Health Foundation, Microsoft Research, Mrs Dale Medical Neurology Research Fund, Patrick Berthoud Charitable Trust & Wellcome Trust

time

The Impairment of Memory in Epilepsy

Christmas Newsletter 2016

Back: Dr Fraser Milton; Dr John Baker; Prof Adam Zeman; Mr Matt Lomas; **Front:** Mrs Marilyn Evans; Dr Sharon Savage

Thanking you very warmly for your contribution to the TIME project this year. This letter summarises our recent activities and progress

The TIME Project
University of Exeter Medical School — Cognitive & Behavioural Neurology
College House, St Luke's Campus, Magdalen Road, Exeter EX1 2LU

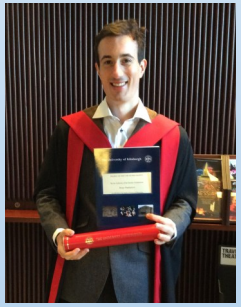
Research News — People

Sharon Savage, who joined us from Sydney as Research Fellow in 2014, is moving to a permanent lectureship in Psychology but will remain closely involved with TIME. She has transformed our data base and completed studies of the outcome of TEA and its effects on the sense of smell. She has paved the way for our current study, examining how treatment of TEA affects the memory problems that can accompany it.

John Baker, a neurologist in training, has joined us as a clinical research fellow to examine interrelationships between epilepsy and memory. Among other projects he is analysing the data we have now collected on around 130 patients with TEA which will allow much the fullest description to date.

Matt Lomas has just arrived as a graduate research assistant after degrees in Bangor and Bath. He will be seeing patients referred from the around the UK into the 'treatment study'.

Helen Ryland, our research administrator, left earlier this year for teacher training; her place has been taken by **Marilyn Evans**, who has previous experience working in Psychology.



Many of you will have met our previous students and fellows: **Kathryn Atherton** and **Serge Hoefeijzers** were awarded PhDs during 2015 for their research on TEA: both went on to win postdoctoral fellowships, Serge in Edinburgh, Kathryn in Oxford. **Nils Muhlert** and **Fraser Milton** are Psychology lecturers in Manchester and Exeter respectively, **Chris Butler** is Associate Professor of Clinical Neuroscience in Oxford: all remain active in TEA-related research.

Publications

Since we last wrote to you, we have published six new peer-reviewed papers on aspects of TEA. Work by Serge and Kathryn has shown that the 'accelerated forgetting' often seen in people with TEA - and in other forms of epilepsy - occurs over the hours after new learning (***Neuropsychology 2015;29, 117-126***); the main loss is not, as we thought it might be, overnight, though there is evidence that, in people with TEA, sleep fails to contribute as it normally would to the 'consolidation' of memory (***Cortex 2016; 84:80-89***).

Publications continued...

Memory for pictures seems to behave differently to memory for words in TEA, with more rapid forgetting (***Epilepsy and Behaviour 2015;42:107-116***). Sharon's very recent work has shown, reassuringly, that in general TEA has a good prognosis and is not a forerunner of dementia (***Seizure, in press***). In keeping with the high frequency of hallucinations of smell in TEA, she found that there is a reduction of the sense of smell in people with TEA as a group, though this does not correlate closely with memory problems (***Epilepsy and Behavior, in press***).

About two years ago we were contacted by someone who had developed symptoms very similar to those of TEA in the context of treatment with a drug, Baclofen that has well understood effects in the brain. We joined forces in a detailed study and have recently described her case (***Cortex 2016; 7:9-19***). This study revealed a specific cause for memory problems of exactly the kind that occur in TEA: further work is needed to establish whether this particular mechanism is relevant to patients with TEA more generally.

We have also written four recent book chapters on aspects of TEA. Although for a while we were the only group to be publishing regularly on TEA there have been recent descriptions of series of patients with TEA in France and Italy; the condition is also being researched actively in Sydney. We are no longer alone! Please let us know if you would like us to send any of our papers which we would be very happy to share.

Current Projects

As mentioned, we have just embarked on our '**treatment study'** to find out whether treatment for epilepsy, which we know to be effective in controlling the amnesic seizures that occur in TEA, also benefits memory more generally. Many of our participants have reported improvements, following treatment, in the accelerated long-term forgetting, autobiographical memory loss and loss of memory for routes that often occur in TEA but these improvements have never been measured: we hope to do so now. We will be testing patients with newly diagnosed TEA, other types of temporal lobe epilepsy, and, for comparison, unaffected participants tested at the same intervals as our patients. This study will also give us an opportunity to search for antibodies to the nervous system in newly diagnosed patients as these are being increasingly recognised as a cause of both unexplained epilepsy and memory impairment. We have recently identified the first such case. Many thanks to our collaborators around the country for their referrals of suitable participants (as close to the day of diagnosis as possible)!