Subtext 8

Spring 2009

- Listen and learn
  Giving King-Kopetzky Syndrome a fair hearing
- The vision thing
  Kodak moments from the career of an experimental psychologist
- Speaking terms
  Warning: slippery language ahead
- Open water
  Getting FRANK about doing good

University of BRISTOL

2009 CENTENARY

GREAT PAST ~ GREATER FUTURE

Welcome

Look at the people in the picture opposite – the staff of the University when it opened a hundred years ago. Most of their stories are lost and we will never be able to satisfy our curiosity about what went on behind those fine beards and stern expressions.

A century from now, our successors will be better placed, if only because they will have an old magazine called *Subtext* in the archives. When they leaf through this issue, they will find out about an anthropologist's encounters with Buddhist death rituals (p14), discover how a German linguist's work has been influenced by his own experiences as a migrant (p10) and meet a couple of technicians who preside over a dynamics lab with a firm but friendly hand (p12). All in all, the people who worked here in 2009 will seem less distant. Not to mention less stern and whiskery.

I hope you enjoy this issue of *Subtext*, whether you're reading it in 2009, 2109 or sometime in between.

Happy centenary.

Barry Taylor
barry.taylor@bristol.ac.uk

Contents

Next issue due out June 2009

JASON INGRAM

Subtext Spring 2009

Subtext is produced termly by the Public Relations Office, which is a department of Communications and Marketing Services.

Communications and Marketing Director
Barry Taylor

Assistant Director/ Head of the Public Relations Office
Jill Cartwright

Subtext editors
Hilary Brown, Nick Riddle

Design and production
www.pelotondesign.co.uk

Print and reproduction
Portishead Press. This publication is printed on Cyclus Offset, a 100% recycled paper stock using vegetable/mineral oil-based, environmentally friendly inks.

Subtext is available online at bristol.ac.uk/university/publications/subtext

For the latest news about the University, see bristol.ac.uk/news

For an insight into research conducted at the University, see *re:*search magazine and visit bristol.ac.uk/researchreview

Public Relations Office,
Senate House, Tyndall Avenue,
Bristol BS8 1TH
Tel: +44 (0)117 928 8895
Email: news-team@bristol.ac.uk

Subtext No 8, February 2009

ELEK MOLNÁR

Professor Elek Molnár combines research in the MRC Centre for Synaptic Plasticity with teaching in the Department of Anatomy. He talks to Hilary Brown about his habit of doing more than one job at a time (and occasionally trying to be in two places at once).

I was born in Nagykőrös, Hungary. Because Hungary was controlled by communists at the time, people expect me to say that we had to march around waving red flags, but it wasn't like that. It was a relatively liberal 'Goulash Communism' and you could get on with your life as long as you didn't come into conflict with the authorities.

My mother was an art teacher and my father was a sculptor and ceramicist. Pottery didn't pay very well, so my father made money by restoring fireplaces and renovating the décor in historic buildings, but some of his sculptures are still on public display. I learnt his trade as a boy, which helped me earn money to support myself through university. Later, at medical school, it struck me that his knowledge of the musculoskeletal system was better than mine. He had a classical training during which he had attended anatomical dissections and his reproduction of the human body was extremely accurate.

I wasn't a particularly good primary school pupil, but I liked chemistry. I even set up a lab at home. The teachers noticed my fascination with chemical reactions and alerted my parents, but not before I caused an accidental explosion in my newly redecorated bedroom, covering the walls in black reagents. I did better at secondary school, where I had some excellent science teachers.

I studied medicine at the University of Szeged. You can do so many things with medicine: you can be a biophysicist, a medical chemist, a psychologist, a GP. I wanted to keep my options open. I chose Szeged partly because I had read a couple of books by Albert Szent-Györgyi, who used to work in the biochemistry department there and won a Nobel Prize for the discovery of vitamin C. One of the first things I did was to knock on the department's door and ask if they had any projects I could help with. While this was an unusual request from a first-year medical student, they didn't throw me out. They involved me in research projects and allowed me to run practical sessions and tutorials with students who were sometimes just a year younger than me. I spent all my spare time there.

University was overwhelming at first. During my first year I shared a room with six others. It was so small you had to turn sideways to walk between the beds and get dressed in the corridor outside. It was noisy and chaotic, but I got into a routine, and set up a quiet corner in a separate study room to do my work. I enjoyed all aspects of medicine and graduated with the highest mark in my year.

My first job was as a research fellow in the biochemistry department in Szeged. I studied enzymes and membrane calcium pumps in muscle tissue. I also worked nights and weekends in a new stroke unit. It had no laboratory facilities during the night, so if I needed to make a diagnosis, I had to get a taxi to take the blood sample to a nearby hospital, where technicians would run the tests and phone with the results. It was a challenging job for a newly qualified medic.

I did my compulsory National Service in an aviation test centre of a military hospital, doing research into how muscles adapt to zero gravity. I worked with pilots but sadly never got to go on a fighter jet myself. I had a job lined up at the State University of New York for when I finished my stint in the army, but I couldn't speak English, so I used to sneak out of the base to do a crash course in English. One day I got caught and was given a detention.

Going to America was an exciting opportunity, but challenging too, especially after only seven weeks of learning English. I enjoyed the stimulating new environment that allowed me to develop my research. I also immersed myself in the language. By the time I left, I was submitting research papers in English on the molecular properties of calcium pumps that regulate muscle contraction.

I missed the regime change in Hungary and the German reunification. When I returned to Hungary, it felt like a different country and it was exciting to see all the positive changes. At the university many people had moved on and the faces had changed. When I turned up at the biochemistry department to start work, I was turned away at the door by a new member of staff who didn't know me. It wasn't all bad, as she later became my wife.

Something about English culture always appealed to me. I once came to London on an organised tour. I visited Oxford for the day and loved the college buildings. I was reminded of this when I took up a post at the MRC Neuropharmacology Unit in Oxford to do research into neurotransmitter receptors of the central nervous system. Before we moved to the new pharmacology department, the unit was housed in a temporary portakabin, so it wasn't quite the Oxford I remembered.

I planned to return home eventually, so I tried to keep my Hungarian medical and research qualifications current. This involved driving back to Hungary several times a year to take exams. My record was 24 hours from Oxford to Budapest. Life was so hectic that my wife and I had to arrange for our wedding to coincide with a trip back home for the public presentation and examination of my PhD thesis. My viva date changed three times and so did the date of the wedding.

I went to Newcastle to establish my research group and to teach pharmacology to medical and science students. It was quite a change from full-time research, but my medical training had given me a solid grounding in preclinical subjects so it wasn't too difficult to switch. The teaching experience and successful research grant applications helped me to get a job at Bristol.

Bristol is such a stimulating environment. We have some outstanding neuroscientists engaged in interdisciplinary research. I try to use my medical background and experience in molecular neuroscience to bridge the gap between clinical and basic research – for example, in collaboration with clinicians, I'm currently investigating the molecular and cellular mechanisms involved in brain injury in preterm babies.

I don't see myself going back to live in Hungary now. We visit, and my daughter is fluent in Hungarian. She picks up new slang words that I don't understand. Mainly I miss the sunsets and being able to walk around in a T-shirt in the summer. My pet project is restoring my father's workshop. Perhaps the grandchildren will use it one day.

DAVE PRATT

OPEN WATER

Social enterprise is a young concept. Professor Bronwen Morgan (below, left) and PhD student Sarika Seshadri (right) are helping it grow, through their work with an innovative Bristol entrepreneur. They talk to Nick Riddle about altruism, safe drinking water and the new role that academia can play in charting unfamiliar territory.

JASON INGRAM

Never in the history of higher education have universities seemed less like ivory towers. Take socio-legal studies – a new field, cross-pollinated by disciplines including law, sociology, cultural studies, anthropology, economics and history, and with the potential to assist, or even to lead, social change in far-flung corners of the world.

Many of the people involved in socio-legal studies are very accustomed to crossing borders. Professor Bronwen Morgan in the School of Law was born in Zimbabwe and moved to Australia as a teenager, where she studied first English Literature and then Law. Sarika Seshadri is a half-Finnish, half-Indian postgraduate student who followed her Bristol degree in Politics and Sociology with an MA in International Relations and felt 'very drawn to development'.

Morgan first encountered the real-world blending of law with wider topics when she worked for the High Court of Australia. 'We had a big case on Aboriginal land rights, which turned out to be a watershed moment,' she says. 'It was at least as much about history and politics as about law. Working on that case changed the whole way I thought about my postgraduate studies.' She went on to pursue an interdisciplinary PhD at the University of California at Berkeley that combined politics, law and sociology. 'It was a unique programme at the time, not unlike what we're developing at Bristol now,' she says.

While at Oxford University, Morgan worked on a major project looking at the commodification of water and the companies involved in its delivery in developing countries. 'It was exciting because of the sheer energy of the activism, but the outcome was often a bit of a deadlock,' she says. 'I was writing an article for a magazine called *Soundings* and I was looking for a positive way to end it, to put forward ideas. I thought it'd be interesting if local government bottled its own tap water, sold it locally and then used the profits to improve water supply in developing countries.'

When Morgan moved to Bristol in 2005, she read about local entrepreneur Katie Alcott, a graduate of the University of the West of England who had started FRANK Water to do exactly what Morgan had envisaged (see panel). 'I was so impressed,' she says. 'She'd actually gone out and done it.' She got in touch with Alcott to suggest working together. 'The Economic and Social Research Council [ESRC] offers scholarships for collaboration between academics and industry, so I asked her if there was anything she needed that research could help. She felt there was a very big change

'Capitalism is really the only game in town.'

ahead: she'd set up FRANK to work on a small scale, travelling to India and working with Naandi [see panel] face to face, but it had grown. Once that happens, you need support structures.'

And that was where Morgan thought she, and socio-legal studies, could help. 'FRANK were getting more and more questions from people buying the water, and from people funding them. How do you know that the projects you're funding are actually working? How do you communicate that and make everything accountable?' Because this is such new territory, the maps have to be drawn; and the results of the Bristol study will provide a template for similar projects emerging around the world. Seshadri, who was recruited to the project on an ESRC scholarship, has already begun the mapping.

Social enterprise – whatever *that* is

What is behind the social enterprise movement? Morgan traces it back to the end of the Cold War. 'The idea of an obviously socialist, or just a state-sponsored, way of doing good has lost a lot of ground,' she says. 'Capitalism is really the only game in town, so the impulse to do good is now channelled through that, rather than through the government.' But the desire for an alternative is still strong; just Google the slogan 'another world is possible' and you'll find a global community of groups united (more or less) in the pursuit of social innovation.

Morgan detects a change in the student body over the years: 'They became less interested in public service than in high-earning jobs,' she says, 'but recently there's been a swing back, or an impulse to combine the two. They want to earn the big bucks *and* feel good about it. That's the cynical view, anyway.'

Social enterprise has become a career option in itself rather than just an altruistic sideline, says Seshadri. It's also acquired an air of glamour, as she discovered at a recent awards ceremony in London for social enterprises: 'It was sponsored by a major bank, the dress code for the event was "eco-chic" and they served champagne and canapés.'

But how do you define 'social enterprise'? That's not always easy. 'Using an entrepreneurial attitude to solve social problems' is one definition, but it doesn't help potential customers or investors to evaluate the

ABOUT FRANK

FRANK was set up in 2005 by Katie Alcott, a graduate of the University of the West of England. Sales of FRANK's bottled water – from the Tarka Spring in Devon – help to fund clean drinking water projects through the construction of community-owned filtering plants, initially in India. FRANK works with three organisations:

- WaterHealth International (WHI) oversees construction of the plants and training of local operators. WHI introduced award-winning ultraviolet technology that disinfects drinking water efficiently and economically. www.waterhealth.com
- Naandi, an Indian non-governmental organisation, runs education and outreach projects and works with WHI to identify communities that will benefit from the new technology via FRANK's funding. www.naandi.org
- Tata Projects Limited provides defluoridation units using reverse osmosis in areas of high chemical contamination. www.tataprojects.com

The local council, or Panchayat, holds meetings at which members of the community can vote to have a plant installed. Villagers pay one rupee (a price set by Naandi) for every 12 litres of safe drinking water.

Every litre of FRANK Water sold in the UK provides 200 litres of clean, safe drinking water through funded projects (ten in India as of October 2008, benefiting over 100,000 people, with many more in development).

For more information, visit www.FRANKwater.com

worthiness of a 'social enterprise' business. FRANK Water is a relatively clear-cut case – it's a registered charity that donates all of its profits to safe water projects in the developing world, and eco-chic is not a priority – but how do you measure the altruistic content of a company that, say, donates only a certain percentage of its profits? Organisations like the Regional Infrastructure for Social Enterprise (RISE) have proposed guidelines, and RISE has introduced the equivalent of a Fair Trade mark for social enterprises in the South West, but standard-setting is still a bone of contention.

That doesn't prevent social entrepreneurs from looking conspicuous in a room full of business people. Seshadri recalls attending a discussion event run by the Bristol Enterprise Network. Among the pure-business members of the panel was a woman from a company selling environmentally friendly nappies. 'The others were talking about exit strategies and joking about wanting to sell for enough money to retire in a few years' time,' says Seshadri. 'Her company was very different; selling up wasn't remotely in their business plan.'

Slowing the flow

That concern for the longer term, often missing in the commercial sector, is something that academia can help to address; in the case of Naandi's clean-water projects, the key to their long-term success is to proceed slowly and methodically rather than, as Morgan says, 'transplanting solutions that have worked somewhere else so as to speed up the outcome'. That can lead to a clash of timescales – grant-giving bodies, too, are often impatient to see results – but a university can help to redress the balance and argue for a less hasty approach.

Another crucial part of the methodology is to collaborate rather than impose, explains Seshadri: 'This is the community's water source, so people need to feel a sense of ownership over it. The local Panchayat holds a village vote before installing the plant, and they discuss where it should be installed.' Naandi also has a policy that the community has to contribute a part of the cost of setting up their plant. Local people are usually just as keen on the idea. 'They don't like the idea of accepting charity,' says Seshadri, 'especially when it comes from overseas.'

Indeed, everyone is sensitive to the issues involved in this kind of social enterprise. Morgan was initially reluctant to work in the development field 'because the idea of blundering into a country and trying to find solutions for them was too reminiscent of my childhood in Zimbabwe and Australia. And when a private company comes in from overseas and takes over an entire network, that causes a conflict between anti-globalisation protestors and politicians, and it becomes intractable.' But these new partnerships are very different, she says. 'Naandi is the powerful partner in this rather than FRANK, and we're working very closely with them.'

Back to business

Seshadri's work is still in its early stages. But FRANK is already benefiting from Morgan and Seshadri's work: the University's food outlets in The Hawthorns and the Refectory are now buying FRANK Water, and the company's profile is rising all the time, with contracts to supply the water for the Bristol and Bath Half-Marathons.

This growth produces tensions as well, but a university is the ideal place to address them – even if they seem contradictory. For instance, Morgan mentions that 'one challenge is whether we can do this on a scale that really makes a difference. That brings back the impulse to grow, which prompts the question, always lurking in my mind, "Do companies *have* to grow?"' This and other questions are the subject of vigorous international debate, conducted in arenas including the Worldwide Universities Network (WUN), of which Bristol is a member. Morgan and her colleagues have organised discussion events via WUN, and are bringing the debate to the public during the ESRC Festival of Social Science in March 2009, with an event hosted by the University entitled 'How social is social enterprise?'.

A fluid future

It's difficult to predict the effects on social enterprise of the global economy's nasty turn. Morgan thinks it could go either way: 'People might pull back on anything unnecessary, like donations, or they might conclude that the problem has been the uninhibited pursuit of profit and we should change our ways. In a practical sense, more people will be out of work and unsure about their future, and they might get involved because they have more time.'

But it's fairly safe to assume that social enterprise is here to stay. 'It almost feels like a resurgence of something,' says Morgan. 'It might be too much to call it a return of the 1960s ethos in another form, but I think there's something in that. A recognition, maybe, that social movements and working for change might be a good idea after all.'

FRANK encounters

Seshadri went to Andhra Pradesh in northern India in early 2008 with a FRANK volunteer to see the results of the funding first-hand. She found it fascinating to see how everything played out on the ground. 'A lot of the time it's not what you imagine,' she says. 'Naandi is a much bigger, more influential organisation than I'd realised. One of their people told me that they had 350 projects, and they were sure to have at least 700 different problems at any one time.'

Following the visit, Seshadri prepared an initial report on Naandi's projects, the working relationships between the government, Naandi and the community, the obstacles that arose, and the solutions being found.

'I came away feeling very optimistic,' she says. 'People are finding ways to deal with problems, like setting up transport for people who have difficulty getting to their local plant.'

FRANK's funding of Naandi is small compared to some of the organisation's other sources, and such visits give FRANK more of a presence there. Representatives from Naandi have since visited Bristol, which has strengthened the relationship between them. Seshadri will soon return to Andhra Pradesh for more detailed research and fieldwork.

SARIKA SESHADRI

Clockwise from top left: A clean water plant in the village of Telaprolu; Naandi staff talking with a teacher at a nursery school in Kocotharam about the benefits of providing children with clean water; children in Kocotharam drinking 'Naandi Water'; local Safe Water Promoters in Kocotharam showing educational materials

Bristol in pieces

TWENTY QUESTIONS

Jez Conolly, Arts Faculty Librarian in the Arts and Social Sciences Library, prefers cakes and odd moments to tragic life stories, so don't hold your breath for his harrowing memoir of living with restless leg syndrome. But you could always check out his new book, *Beached Margin: The Role and Representation of the Seaside Resort in British Films*, published by Joyland Books (www.joylandbooks.com).

What is your favourite meal?
Recently it's been a Nigel Slater special: hot and sticky roast chicken with baked shallots in double cream and some thin green beans. I'm usually on safe ground with anything French Farmhouse.

If you were offered one superpower, what would you choose? I'd like to be able to anticipate déjà vu: have a conversation with somebody then produce a piece of paper with every word just spoken written down. A bit Derren Brown, I know, but there you go.

Cat or dog? Or neither?
Neither. Tortoise.

What do you sing in the shower?
The theme from *It's a Knockout*. It occasionally morphs into the theme from *Jeux Sans Frontières*.

Favourite smell?
The strike strips on the sides of matchboxes. I was probably a pyromaniac in a former life.

Your greatest character flaw?
My inability to say 'no' to pudding.

What keeps you awake at night?
I get restless leg syndrome these days. There's nothing quite like a bit of involuntary one-footed Riverdance every 30 seconds to stop you from nodding off.

Native Americans believe we all have a Spirit Animal. What would yours be?
Orang-utan. I'm quite good at sitting on my backside all day and pulling silly faces for food.

Favourite spot in the world?
Until last year I'd have said Barafundle Bay in Pembrokeshire, but having now been to the Blue Lagoon in Iceland I'd have to go for that.

Least favourite spot?
It's neck-and-neck between Cleethorpes Marketplace on a Saturday night and the side streets of Marrakech. They just about match each other for squalid danger, in my experience.

One book, one piece of music, one film.
Book: *Time's Arrow* by Martin Amis
Music: *Fade Into You* by Mazzy Star
Film: *The Long Day Closes* by Terence Davies

Who would you like to banish to a desert island?
Anyone who indulges in recreational grief, conspicuous compassion, call it what you will. Judging by the size of the Tragic Life Stories sections in bookshops, it'll need to be a pretty big island.

You can make one new law. What would it be?
That everyone should laugh until they cry at least once a day.

Your biggest life-changing experience (so far)?
Meeting, falling in love with and marrying Caroline.

Something you wish you'd known about life when you were 18?
Not to worry about what people think of you. I wish I'd had the confidence to make a fool of myself. These days I'm pleased to say I do it all the time.

'My philosophy is this …' Life is a succession of cakes and odd moments, and all the better for it.

When and where were you happiest?
In a good independent cinema at any point in my life enjoying a great movie.

Where will you be ten years from now?
It would be nice to think of myself as a successful writer, commanding huge advances for my latest novel and winning plaudits from critics, but I will probably be shuffling round a shopping centre in my carpet slippers, sipping from a bottle of Windolene and growling at people.

How would you sum yourself up in one line?
'Oh sod it, that'll do – pass the wine, chocolate and holiday brochures would you, darling?'

Is there a question you'd like to be asked? Would you like whipped cream on your hot chocolate?

THE PLUG

French Queer Cinema by Nick Rees-Roberts (Edinburgh University Press)

This is the first comprehensive study of the cultural formation and critical reception of contemporary queer film and video in France. Dr Nick Rees-Roberts, Lecturer in French Film Studies in the School of Modern Languages, examines the socio-political context of queer DIY video and independent gay cinema, including critically acclaimed films such as Patrice Chéreau's *Ceux qui m'aiment prendront le train*, Olivier Ducastel and Jacques Martineau's *Drôle de Félix*, François Ozon's *Le temps qui reste* and André Téchiné's *Les témoins*. The book also studies cinematic representations of migration, social exclusion and queer sexualities in the light of recent legislation on sex work and immigration.

The Cambridge Companion to Shostakovich edited by Pauline Fairclough and David Fanning (Cambridge University Press)

Dmitri Shostakovich was the Soviet Union's foremost composer, regarded by some as a collaborator and by others as a symbol of moral resistance. This Companion, co-edited by Professor Pauline Fairclough in the Department of Music, brings together an international team of scholars and uses up-to-date research to present a full account of Shostakovich's varied musical output and the changes in his reputation after the demise of the USSR. The book offers a guide for any reader seeking a fuller understanding of Shostakovich's place in the history of music.

100 edited by Barry Taylor (University of Bristol)

We couldn't let this pass without a plug. Subtitled 'A collection of words and images to mark the centenary of the University of Bristol', this richly illustrated book brings together specially commissioned material from around 60 authors. Contributors include art historian Sir Roy Strong, children's author Julia Donaldson, chef Heston Blumenthal and actor Tim Pigott-Smith. Details via bristol.ac.uk/centenary

SPEAKING TERMS

Dr Nils Langer rarely gets through a day without being called on to explain the ways of Germans to the English. It complements his academic work, which delves into history to uncover the links between language and identity. He talks to Nick Riddle.

'I'm representing my country whether I like it or not,' says Dr Nils Langer, offering us Lebkuchen with our tea while Daphne the Dachshund scrambles with difficulty into his lap. As a German linguist who has lived in the UK for almost 20 years, he is very conscious of his multiple roles: researcher into the history of language, advocate and explainer of German culture, and untangler (and sometimes creator) of cultural misunderstanding.

To illustrate this last role, Langer describes a coach trip he took with a friend visiting from Germany. 'It was National Express, in the days when they still served tea,' he says. 'My friend said to the stewardess, "Bring me a tea", which is perfectly acceptable when you say it in German. The stewardess looked shocked. And I jumped in with, "She means would it be at all possible to have a cup of tea, please?" You can imagine how, if I hadn't been there as a buffer, being terribly embarrassed about it, the stewardess would just have thought, "Bloody Germans – terribly rude and demanding".'

Langer uses anecdotes like this – of which we all have our own examples – to point out that language is about much more than communication. It can be used to wield power, it can reinforce stereotypes, and for the non-native speaker it can create a false sense of comprehension. Especially when it comes to nuances and details like politeness.

'In a way, it's our fault for speaking English,' says Langer of the above example. 'We get by with it, and English people tell us politely that we have excellent English, and we believe them.' But the deeper layers of a foreign language – how it connects with social conventions and behaviour – can remain elusive. Langer suggests we reverse the situation: what happens when English speakers go to Germany? 'We correct your German. Not because we're horrible, but because we're so flattered by your attempt to speak our language that we want to help you.' But the English response, Langer argues, is usually to feel criticised, and to lose confidence.

The lessons of history

Langer's field of study is socio-historical linguistics – in other words 'the use, prestige and stigmatisation of languages in the past'. He has taken his interest in language and identity as far afield as Wisconsin, which saw a huge influx of German immigrants in the 19th century. While attending a conference at the University of Madison-Wisconsin, he came across a collection of German school grammars from the turn of the 19th and 20th centuries in the library.

The American grammars made for a good case study of migration and identity. How do migrants adapt? What do they retain from the 'old country'? These questions are as valid now as ever: many conservatives in the States – and in the UK – express nostalgia for the 'olden days' when migrants were quick to adopt the rules of their new home, learn English and shed their former identities. Close inspection shows this to be a fallacy: a Wisconsin colleague of Langer's has looked at census data showing that even in 1910 – well into the second and third generations – a substantial proportion of German Wisconsinites still spoke only German. But at the same moment, concludes Langer, their children seem to have been heading decisively towards an American identity.

'In the first generation of immigrants, these books were talking in German about life in America, clearly addressing the children of immigrants as newcomers. When a flag was shown, it would be the American flag.' Around 1900, that 'welcome to your new home' approach begins to change: the topics become broader in scope, and include accounts of life in Germany, indicating that the majority of readers are assumed to be self-described 'Americans' now learning German as a foreign language.

The wandering scholar

'Migration is always an interesting topic,' says Langer, 'and it applies to me personally because I'm a migrant myself.' It was at school in Germany that his trajectory began to point towards the UK, when a foreign language assistant from County Durham invited him to visit. He did, loved the area with its castles and beaches, and was thrilled to be 'speaking the language, noticing so many cultural differences despite the superficial similarity between England and Germany. That was a really liberating moment.'

He got a place at Newcastle University reading German and English and spent most of the 1990s there, culminating in a PhD in German Linguistics. 'If I got homesick,' he says, 'I would go to the beach at Tynemouth and look across the North Sea and wave to my mother on the other side in Schleswig-Holstein.'

Langer is a big advocate of living abroad. 'It's the kind of thing that we try to instill into our students,' he says. 'You're constantly comparing what you know with what you see. And, of course, you don't always agree; I mean, English people are crazy – don't quote me on that – but living abroad you have to keep challenging your own ideas of what is normal. And after a while, even the English seem quite normal.'

The good, the bad and the 'non-standard'

But even within one's own language there are plenty of norms to challenge. Take an issue in English grammar that has exercised the patience of teachers for generations: split infinitives.

'The rule goes back to the 18th century, when English grammarians tried to force English to behave like Latin. But the Latin infinitive is written as one word so you *can't* split it,' says Langer. 'Linguistically the rule is stupid, but a lot of influential people believe in it, so *socio*linguistically it's a very powerful tool to discriminate between people with a "classical" education and those who went to "normal" schools.'

Langer has examined the forces at work in the formation of these kinds of rules in a book-length study of 'bad German' (with co-author Winifred Davies from Aberystwyth University). When a language is 'standardised' (a lengthy process undergone by the major European languages), diversity becomes undesirable and many variations found in regional dialects become stigmatised as 'non-standard' or 'bad'. In the case of German, Langer and Davies examined grammar handbooks from the 16th century onwards to find out 'when that prescriptiveness started, what grammar constructions were considered "bad", who first said so and what reasons they gave, and whether those judgements changed over time.' The answers they found were, inevitably, a lot less concise than their questions.

DAVE PRATT

'English people are crazy – don't quote me on that.'

They concluded, among other things, that grammarians were far less interested than one might expect in explaining the reasons behind condemning a particular construction. But Langer and Davies inferred a number of motives behind the stigmatisation of certain 'non-standard' uses, including impulses to discourage constructions that were considered archaic, that smacked of the 'lower class', or that were imported from a foreign language.

The importance of language to national identity, like the rules of that language, can change over time. Ask a German person today what makes them German, and they might show you their passport. 'From the Middle Ages until the unification in 1871, people defined themselves as German because of the language,' says Langer, 'even if they lived a thousand kilometres apart and couldn't understand each other's dialects.'

But language remains a key component of any national psyche, and the threat of 'language decay' is the stuff of nightmares for conservatives across Europe.

'A lot of people in Germany are worried about the influence of English on German,' says Langer. 'They think that German will die out within 30 years.' But look objectively at the number of Anglicisms in German, he says, and you notice how well they're integrated and how useful they are. 'In fact, the influence of French on German in the 17th century was much greater,' he says. 'One of the things we can do for our students is to show that just because everyone agrees on something, that doesn't make it true.'

Being German

Looking deeper into difference is something else that Langer encourages in his students. 'I talk about cultural differences between German and English, because so much hostility is based on a misunderstanding.'

To illustrate, let's return to the National Express incident. 'Germans seem rude,' says Langer. 'You listen to them when they're here and they never say please. But why? Because in Germany we don't say please. Does that mean we're rude? No, it's a convention. We have other means, such as using formal pronouns, to demonstrate politeness. Often what appears "rude" is actually just informal, the way you would be with a friend, and the other person can then be informal back to you. It's a bit of a game. But it's completely lost in translation.'

Langer offers another contribution to cross-cultural understanding, gleaned from his teaching work. 'When we have Erasmus students here from Germany with final-year students from England, it's the Germans who dominate the discussions. Not because they're cleverer or ruder, but because in German schools we're taught to express a view on everything. In England you may have a view, but best not to express it.' He's not claiming that either approach is objectively better, just that both have drawbacks. 'The disadvantage is that in Germany nobody is ever happy because they always speak out. No matter how punctual the trains are, they're not punctual enough. When I'm back home for Christmas, it takes me a while to get used to that complaint culture again. It's a bit *anstrengend* – exhausting. I think ultimately the English are happier because they put up with more.'

Langer takes his role as cultural interpreter very seriously, but he's also quick to appreciate certain aspects of the British character. 'We're more casual over here than in Germany,' he says. 'There are crazy laws in certain areas, like not doing the laundry and other household tasks on Sundays. I was trimming my hedge the other day and my German lodger said, "You can't do that, it's Sunday". I thought he was joking. But he wouldn't joke – he's German.'

DAVE PRATT

DYNAMIC DUO

If it moves, test it. That's not quite the motto of the Dynamics Laboratory, but technicians Tony Griffith (opposite, right) and Clive Rendall have met a wide range of sometimes eyebrow-raising projects with an unruffled, can-do attitude. They talk to Nick Riddle.

In a corner of the Dynamics Laboratory, an extension of the Queen's Building half-submerged in the pavement of University Walk, sits a trampoline. A sign attached to it reads, 'Do not jump on this trampoline'. Nobody is jumping on it. Imagine the self-restraint.

The trampoline, like the radar dish next to it and the showjumping hurdle nearby, is here to be tested. Even then, nobody will jump on it.

'The Chinese manufacturers specify a maximum load of 100 kg, but the UK distributors need to know more,' says Tony Griffith, one of the faculty technicians who look after the Dynamics Lab. 'What *exactly* happens if the load is greater than 100 kg? They'd had reports that the springs have straightened under stress.'

The trampoline is an example of a job brought to the lab by an academic with contacts in industry and an eye for a good student project. Anything that could be damaged by vibration is a candidate for dynamic testing, which means that, as Griffith says, 'we never know what someone's going to bring through the door'. But when they do, Griffith and his colleague Clive Rendall, a pair of avuncular figures in blue-grey overalls, are there to meet them.

Little earthquakes

The principle here is the same as in the Earthquake and Large Structures Lab at the other end of the building – you shake, hit or vibrate things to see how well they cope – but the scale is smaller.

'Buses tend to judder while they're idling,' says Rendall by way of example. 'But they're a lot better than they used to be, because of testing like this; they figured out ways to damp down the vibrations.' More crucially, when the vehicle in question is one that flies, you don't want its circuit boards to fall apart if things get choppy.

To help avoid such calamities, engineers build or adapt a 'rig' – an assembly of instruments and other hardware – to put products through their paces.

'It's part of our job to look at what they're planning and help them achieve it,' says Griffith.

'And to make sure nobody gets hurt,' adds Rendall. 'Some people have no concept of danger.'

The two of them have some 70 years of combined experience to draw on: Griffith worked for Rolls Royce in Bristol for 32 years before joining the University's Aerospace Department as a machinist and technician in the wind tunnels; and Rendall has been at the University since 1986, first in the School of Chemistry's workshop and later in Mechanical Engineering. When the Bristol Laboratory for Advanced Dynamics Engineering (BLADE) opened in 2005, they were brought in in a supervisory role.

The equipment assembled by Griffith and Rendall includes an armoury of instruments for measuring and monitoring: shaking tables, accelerometers, strain gauges, scanning lasers (to take measurements without having to attach anything to the object being tested) and some rather nifty isolation tables, which can float on a cushion of air to avoid vibrations travelling up from the ground.

There are a number of ways to create the vibrations needed for testing, as Rendall explains: 'If it's something flat like a panel and you want to hit it with sound vibrations to monitor its mode shapes – the way it curves and bends at specific modes of vibration – you can use white noise. But that's a pretty unpleasant sound. So we tried playing classical music instead. You can still do the testing with it, but it's much easier to live with.'

Testing, testing

Griffith and Rendall pride themselves on their practicality. Science departments are often abuzz with formulae, conjectures and simulations; the Dynamics Lab's concrete, steel and machinery delivers real-world vibrations and impacts. Mathematicians have had their ideas shaken up after a hands-on session in the lab.

And there are many different hands involved: companies including Rolls Royce come to test new materials and composites; and a manufacturer of carbon-fibre canoe paddles for use in the Olympic Games came to test the strength of a new design. 'They gave us some specifications; we put up shrapnel nets and got on with it,' says Rendall.

The lab has also catered to the needs of the medical community by road-testing a new technique to reset broken bones. The conventional method involves aligning the two broken ends using metal rings, then stretching them once a week to stimulate regrowth. But new research has found that vibrating the rings constantly makes the healing process quicker *and* less painful. 'We helped them build a test rig so that they could monitor these rings while they moved them around,' says Rendall.

Sometimes visitors also find their horizons are stretched, quite painlessly. 'We've seen members of different departments meet for the first time in here and discover that they're both doing the same kind of research,' says Griffith, 'and they might start working with each other. That's part of the BLADE philosophy – the labs are open to everyone.'

Memory men

Paddles and trampolines aside, there are some core skills that engineering students need to acquire, and the Dynamics Lab is one of their ports of call. Griffith and Rendall, who jointly won a University Teaching Support Award in 2007, installed a control lab on the facility's mezzanine floor equipped with four Quansers – small mock-helicopters anchored to the balcony. These are hooked up to a control system called WinCon.

'They have to control the flying and the rotation of the Quansers via the keyboard,' says Griffith. 'If you enter the right figures in the right parts of the equation, you can get it to go very smoothly. If not, it'll overshoot or go too slowly.'

Skills like these form the foundation of an engineer's training. Griffith and Rendall provide another kind of foundation: institutional memory. 'Students come and learn how to build rigs, they write papers, and then they leave,' says Griffith. 'But we don't. If a student reads a paper that someone wrote a few years ago and wants to use it, we can say, "OK, but it's not all in the paper – this is what they did, this is the table they used".'

'Which is why we get a lot of people coming in and asking, "Are you Tony and Clive? Someone said you can help us",' says Griffith. 'It's nice to be in that position.'

Meanwhile, that trampoline is far from finished with. 'At the moment the students are just doing static testing, loading it up with sandbags. After that, they'll test it to destruction by loading it up with sandbags until it breaks. They'll use accelerometers and strain gauges to measure everything.'

And while the sandbags are flying, do Griffith and Rendall ever notice any expressions of … how should one put it … glee?

'All the time,' says Griffith. 'When they were testing the showjumping fences, everyone else stopped to watch. Maybe we should sell tickets.'

DEATH IN DEPTH

Field research, as past issues of Subtext *have revealed, can involve formidable terrain, thorny politics, extreme isolation, or the risk of frostbite. But sometimes the challenges are more metaphysical – and, in their own way, just as hard to deal with. Dr Patrice Ladwig tells Nick Riddle about his sometimes troubling encounters with Buddhist funeral culture.*

Death in the West may still be considered 'That bourne from which no traveller returns', but then Shakespeare was no Buddhist. The ruling principle of Buddhist belief is that death is followed by rebirth, unless a person attains Nirvana. This is why death rituals are considered the most important of all rituals in Buddhist culture – and why they make for a fertile area of study. Dr Patrice Ladwig, Research Assistant in the Department of Theology and Religious Studies, is a veteran traveller in the Buddhist countries of South East Asia, and has delved deeper than most Westerners into the Buddhist way of death.

Ladwig first went to Laos as a backpacker in 1996, shortly after the communist government had opened the country to tourism. 'There were hardly any cars on the road back then,' he recalls, 'just the odd jeep from the United Nations Development Programme.' When he went back in 2003, and again in 2007, he witnessed two stages in a process of radical change.

'Laos has a reformed kind of socialism, like Vietnam and China,' he says. 'The economy is expanding: the infrastructure is much better, and there are internet cafés and international media in the capital city, Vientiane. And traffic jams, unfortunately.'

But modernity coexists with Buddhist traditions and rituals that have permeated South East Asia – with regional variations – for centuries. Ladwig is one of five academics in the Department of Theology and Religious Studies involved in a three-year comparative study of Buddhist death rituals in South East Asia and China, funded by the Arts and Humanities Research Council. His colleagues are looking at China and Sri Lanka while he concentrates on Laos and Thailand.

Death: theme and variations

'Death is the domain of monks in Buddhist culture,' says Ladwig. 'They don't usually officiate at other major life-cyle events, like birth and marriage. But their precise functions vary. In Sri Lanka, for example, the monks chant specific texts at funerals, and usually Theravada Buddhism, which you find in Sri Lanka, Laos, Thailand and Cambodia, is quite conservative about the texts. But in Laos, a few thousand miles over the ocean from Sri Lanka, you find some variations. When you study these changes, you get an idea of the complex ways that Buddhism spread and developed in different local settings.'

Ladwig worked with a French anthropologist and a Laotian film team in 2007 to record a pair of annual temple rituals that have a vital place in South East Asian Buddhism. 'You present food to the spirits of your ancestors and transfer merit to them,' Ladwig explains. 'We were able to make a higher-quality film than we expected, thanks to the miracle of currency conversion; it's a short documentary rather than just teaching material.' More recently, he made another film about mortician culture and funerals in Chiang Mai in northern Thailand.

It's easy to imagine a certain awkwardness if one turned up at a Christian funeral with a film crew and a list of questions. But Lao and Thai culture doesn't recognise the same distinctions between public and private, says Ladwig. 'Funerals are almost public performances: the more people who come the better, because you make merit for the deceased and help them to achieve a good re-birth.' He found people very open and co-operative, although preparing the ground is always preferable to turning up unannounced.

This is where Ladwig had a head start: he lived in Laos for two years, spent several months as a monk, and speaks the language. 'When I went back, I told my Laotian friends about the project and asked if they knew of anyone who would allow us to come and do a bit of filming and some interviews. And they would tell me to go to a certain temple and meet a certain monk, and I'd have the name of the family.' His explanation to them about a university research project was generally well received too: Laos has a university, and people, especially in the cities, are familiar with the idea of cultural studies – familiar enough to give Ladwig a taste of his own medicine on occasion. 'They'll ask us about our funeral culture,' he says, 'and they're curious to know Western ideas about death.'

That's not to say that the work was easy. Recording one set of death and post-mortem rituals can be a long process, taking in the evenings at the family's house when the monks come to chant, the cremation ritual, the collection of the bones three days later, and the post-mortem ritual some weeks later, when the family transfers merit to the deceased through the offering of food to the monks and the spirits. And the difficulties can often be more emotional than practical.

'If you go to a funeral of someone who died in their old age after a full life, it's a very relaxed affair,' says Ladwig. 'In Laos it's a little like an Irish wake – people play cards, tell stories, get drunk.' But he recalls one funeral at a temple in Louang Prabang, in the north of Laos, for a 21-year-old man killed in a motorbike accident two days before. 'The family was in a state of shock, but they were still very friendly to us,' he says. 'We asked our questions and we did some filming, but we felt very intrusive. And even just being there as an observer can really drag you down.'

Opposite, top: A monk reads out a sermon at a funeral in Luang Prabang, Northern Laos Opposite, bottom: A family poses with an image of the deceased son in front of a funeral pyre in Luang Prabang Above: Tales from the ricefield: Ladwig poses with a monk ('I'm kneeling because he has a higher status')

ALL PHOTOGRAPHS PATRICE LADWIG

Monks and morticians

Monks occupy a unique position in Buddhist culture, says Ladwig. 'Doctrinal Buddhism has a lot to say about suffering and the impermanence of life. Monks are required to reflect on that, to understand these things, and to console people.' They are also considered immune from the dangers of 'spiritual pollution' that accompany close proximity to death.

Morticians are a different matter; they need protection against evil spirits. Many have tattoos to ward them off, or use magic spells called 'Katha'. 'These are written by a monk on a small piece of paper,' says Ladwig. 'He rolls it up and performs a chant over it, then puts it into a small container that the mortician wears around his neck. Besides protecting them against attack from spirits, it's supposed to keep them in good health.'

Ladwig has collected some interesting biographies from the morticians he has interviewed. He relates the story of one, a former bank employee: 'During the Asian economic crisis in the 1990s he lost his job and started drinking, and he had recurring dreams in which spirits haunted him. One spirit told him to become a mortician. So he went to a crematorium and trained with a mortician for free. Then the old mortician died and he took over the business. He talked about it in terms of karma: his becoming a mortician had to do with something he did in a past life.'

Some stories Ladwig heard were downright grisly. There was the one told by an 80-year-old mortician, for instance. 'The government decided to erect a monument to Thai soldiers killed in the Vietnam War,' Ladwig relates. 'When you erect monuments in South East Asia you often put bones inside to create a relic shrine. So a truck turned up carrying 50 bodies of soldiers and this mortician had to put them in tanks and boil the bones so that the flesh came off, then collect all the bones. He told me it took about ten days.' Ladwig confesses that this was pretty uncomfortable even to hear about.

The risks of immersion

Field researchers, like morticians, are not immune from 'spiritual pollution'; but unlike morticians, they aren't even accustomed to the constant presence of death. 'You try to be professional and detached, but you can't often do that,' says Ladwig. 'To immerse yourself in a different culture, you have to be around people and be empathetic with them.'

And it isn't just the funeral itself that can give you pause; after a week, the coffin is opened for a cremation. 'The face has changed; it can be swollen, and the skin has darkened. You can't help but reflect on that. But you try to go home in the evening and tell yourself that your work is finished and now you're back, just being a regular person.'

And Ladwig *is* that regular person – he's a fan of horror movies, for instance, but that has no bearing on his work. On the other hand, studying death rituals at close quarters has naturally influenced his own outlook. 'If you spend time in another culture and experience a different perception of death, you expand your own appreciation of death. And the differences are quite interesting,' he goes on, sounding a little more like the anthropologist now. 'For example, in the West we think of intensive moaning and crying as an intuitive expression of grief. But Laotian and Thai people believe that if you cry too much, the spirit of the deceased might want to come back and not be reincarnated. They cry only at a few prescribed moments.'

East and West

There are plenty of Western clichés and misconceptions about the 'mysterious East', but what about the view from the other side? Ladwig has had many monks jump to the conclusion that his research is about meditation 'because nearly all Westerners with a serious interest in Buddhism want to meditate' – unlike the majority of Buddhists in South East Asia, he adds.

In deep rural areas of Laos, Ladwig found some striking notions of life in the West. 'They think that we're infinitely rich and live like the people they see in Thai TV soaps,' he says. 'Some also see the West as morally corrupt, alienated and purely materialistic.' His attempts to explain to some of his rural Laotian friends that the realities of East and West are more complex than the exoticised TV images we get of each other meet with mixed success. 'You're forced into the role of cultural translator, and sometimes you manage to deconstruct the clichés, but often you don't, because explanation has its limits.'

Back from the dead

The more Ladwig has travelled between Europe and Asia, the less disjointed he feels coming back. He recalls returning from a six-month trip to India in his twenties, and being 'out of my mind for two weeks – I just didn't understand the world any more'. These days he gets three or four days of jet lag and noticing the different smells and textures – walking on concrete again instead of sand, smelling the fallen leaves in autumn – and that's it.

'You get professionalised by going back and forth so much, which I find a little sad,' he says. 'It's so interesting to feel that existential gap when you move between two worlds.'

Above, left: Scenes from hell depicted on a temple mural in Luang Prabang
Above, right: A member of the temple committee in Vientiane delivers a prayer at the ancestor festival, when food is given to monks and then transferred to the spirits of the deceased

LISTEN&LEARN

While researchers across many disciplines keep trying to tease out the complex relationship between body and mind, doctors and clinicians are having to revisit their approaches to helping patients with a range of 'medically unexplained' problems. Helen Pryce has made a special study of one such group and their experiences of seeking help. She talks to Nick Riddle.

JASON INGRAM

'Having a strategy can often give people more of a feeling of control.'

Beneath the so-called 'mainstream' cases of hearing difficulty – with measurable deficits, an idea of the cause and a set of treatment options – lies a hidden contingent of people with hearing problems that can't be explained by the usual methods.

This isn't some tiny sub-group: it can account for up to ten per cent of consultations in ENT and audiology clinics. 'Generally, people have problems in noisy or stressful situations; they don't catch the ends of words, or they mishear things,' says Helen Pryce, lecturer at the Centre for Hearing and Balance Studies. 'Getting anxious about that can cause a vicious circle that means they cope less well with different listening environments.'

Personal voices

Pryce has made a detailed study of this kind of unexplained hearing difficulty – known as King-Kopetzky Syndrome – and has collected accounts of people's struggles with it and the emotions involved. 'They range from annoyance to despair,' she says. 'Some people won't move in with their partner because they're worried that they won't be able to cope with trying to hear over the noise the partner might make around the house.' Others won't go to busy shopping centres because of the background noise, or to petrol stations 'because of that *beep-baa* noise when the door opens and closes'.

There's also a significant group of people for whom hearing is a professional issue: teachers, doctors, musicians, people who work in tricky acoustic settings like a church. Pryce has also encountered funeral directors anxious that their hearing difficulties interfere with their work, since grieving people often have their faces down and speak less distinctly. The anxiety in such cases is more to do with perception than practicality: people worry about how others will react to not being heard, especially since the outward signs – such as a hearing aid – are missing. 'You can't even say, "I have a hearing loss", because you've probably been told that you don't,' she says.

Pryce herself has a hearing loss that was diagnosed early, thanks to the astuteness of her mother, a speech and language therapist. But her choice of career wasn't a foregone conclusion. 'I did a degree in humanities at Bristol Polytechnic but I didn't have a clear direction,' she says. 'I knew I was interested in psychology and sociology. Then a careers adviser, whose mother was being helped enormously by a hearing therapist, suggested hearing therapy.' After training in London, Pryce went into clinical work there and in the West Country, until her curiosity led her to pursue an MSc at Oxford University.

'In our clinics we were seeing a lot of people who had hearing difficulties with no medically explained cause,' says Pryce. 'I chose that for my area of research.'

She was already teaching at Bristol when the University won a commission from the South West Strategic Health Authority to train audiologists for the West Country. The new Centre for Hearing and Balance Studies runs undergraduate and postgraduate programmes in audiology as well as professional training courses. Pryce helps to deliver these in addition to working as a therapist at St Martin's Hospital in Bath. She also continues her research, which sometimes challenges the orthodoxies of the field.

Seeking help and taking steps

'Audiology still tends to ally itself with a straightforward, biomedical model, which means trying to trace these difficulties to a deficit somewhere on the auditory pathway,' says Pryce. 'But as researchers we're more interested in *how* people experience the hearing difficulty, because that's what drives them to the clinic in the first place.'

Her studies show the psychological effects that can result from being told by a health professional that there is no evidence of a hearing problem. These effects – including feelings of guilt at 'wasting the clinician's time' and 'imagining it' – may sound familiar to anyone who has sought help with other issues, such as back pain or chronic fatigue, that can't be confirmed objectively.

One of the chief strategies at St Martin's, developed partly as result of Pryce's research, is to give people a greater understanding of their problem. 'We try to give them as clear a picture as we can about what their hearing function appears to be and how their lifestyle might affect it,' she says. 'We make suggestions for improving the way they hear speech in the presence of noise.' Instead of leaving themselves at the mercy of a crowded room, for instance, they can 'manage' the space by choosing how to position themselves in relation to sound sources. 'Having a strategy can often give people more of a feeling of control,' she says.

From class to clinic

King-Kopetzky Syndrome is an example of the complex relationship between body and mind that researchers are trying to unravel. Pryce is more concerned with changing the culture in clinics. 'We train people to understand the psychology of adapting to hearing loss as well as to develop all the diagnostic skills,' she says. The BSc and MSc programmes include a unit on King-Kopetzky Syndrome and tinnitus – another condition that comes under the heading of unexplained hearing difficulties – so that practitioners are better equipped to recognise and treat such cases.

It's a good example of how research can feed into practice and help to improve healthcare at the business end. And the measures involved aren't exactly outlandish. On the contrary, the results of Pryce's work suggest something very basic: that one of the neglected skills that clinicians need to develop – ironically – is how to listen.

... AN EXPERIMENTAL PSYCHOLOGIST

WORKING ON VISION

An academic of several stripes, Professor Tom Troscianko talks to Hilary Brown about his kaleidoscopic career in colour vision.

I was born in Germany. My parents were Polish; they worked for Radio Free Europe, a counter-propaganda radio station based in Munich and funded by the CIA during the Cold War. We were known as 'displaced persons'. We were housed by the US Army and had little contact with people outside the base.

My parents didn't think much of the army school. Being patriotic Poles, and with Poland stuck behind the Iron Curtain, they sent me to the only Polish school outside Eastern Europe, which was, bizarrely, in Henley-on-Thames. With minimal warning, I landed in the rather misty but enchanting environment of a Christopher Wren mansion on the banks of the Thames. It was a bit of shock. The teaching was quirky because the teachers were unpaid volunteers, but the physics teacher was good so I got to like physics. The experiments were fun, with health and safety low on the agenda.

After I left school, I went to work for the British Steel Corporation, programming data from steel foundries and strip rolling mills. I collected some of these data myself by dropping things into vats of molten steel and measuring the temperature distribution in the roll. One roll was so stuffed with thermocouples that it shattered in the Llanwern rolling mill, stopping production for a day. It was the most spectacular disaster I've ever witnessed.

But what I really wanted to do was study physics, and this I did at Manchester University. I was even set to do a PhD, but lack of funding for a year meant I had to find temporary employment. The highest-paid job I was offered was at Kodak. It changed my life. I was asked to find out whether there was any difference in the colours on a photographic image when viewed on a print as opposed to on a slide. I didn't even know you could measure colour appearance. Thus began a long quest to understand colour vision. (The answer, by the way, is that the colours don't change very much.)

The research environment at Kodak was rather stuffy, so I was amazed when the company agreed to support my PhD on colour vision. I regarded colour science as a branch of physics, which in a sense it was – Isaac Newton, Thomas Young and Erwin Schrödinger all made contributions to the field through their work on mixing light.

My research career at Bristol began in 1978. The hearing project I worked on wasn't a resounding success, and in my spare time I continued doing experiments on vision, scavenging equipment from what other people were throwing away. I only forked out around £5 on apparatus, and thus kept myself amused in the basement of the Medical School.

A spell at the University of Tübingen Eye Hospital in Germany, studying 'isoluminance' (a technique that presents displays in which the constituent colours are matched for intensity, or luminance, so that the information is provided by colour alone), put me into contact with anatomists and psychologists. I realised that vision science encompassed many disciplines. Back in the UK, a job at IBM programming computers to differentiate between visual textures such as wood and pebbles showed me that computer scientists are also interested in vision. Since the neurophysiology literature was based on the way cats' brains process such information, I became aware that biology can also offer insights into the operation of vision in different species.

DAVE PRATT

This crossing of boundaries came in handy when I applied to return to Bristol's Department of Experimental Psychology in 2002, and argued for interdisciplinary working across departments in the area of cognition. This led to the establishment of two research groups, now 'themes', within the University: Predictive Life Sciences and the Bristol Vision Institute.

I'm lucky because many of the moves I made were down to pure chance, but there's a connective pattern to them. The physics is still there in the work I do on the perception of natural scenes, which requires an understanding of the properties of light, but my main goal is to build some sort of connectivity with the biological, physical and engineering sciences.

Working in isolation can lead to prejudice. Some see experimental psychology as a 'soft' science, but it isn't at all like that. It involves experiments like any other science. The apparatus may be less sophisticated than what you'd use in physics, but you've got to be much more careful that you're measuring something meaningful when you're dealing with complex systems such as humans and other animals. Scientists are getting better at realising how different groups of people can contribute their expertise to a broader understanding of subjects.

Academia went through a period where research got too careful. You could send in research proposals that were unlikely to be rejected because they were competent and there was no reason for them to be turned down, but they weren't very exciting. Some of the 'wow' factor has come back into science now that researchers pay less attention to departmental divides. It's great to be a small part of that bigger story.

'The highest-paid job I was offered was at Kodak. It changed my life.'

ANN PETHERS

Main image: *Vanessa urtica* (Small tortoiseshell butterfly) and *Vanessa io* (Peacock butterfly) by Jane Steuart-Powell

Above, top: *Acherontia atropos* (Death's head hawkmoth) and *Solanum tuberosum* (Potato) by Jane Steuart-Powell

Above, middle: *Cyclamen persicum* (Persian cyclamen) and *Crocus vernus* (Spring crocus), engraving from a watercolour by Sydenham Edwards

Above, bottom: *Nelumbium speciosum* (Chinese water lily) and *Nolana prostrata* (Trailing Nolana), engraving from a watercolour by Sydenham Edwards

BRUSHES WITH NATURE

Tucked away in a corner of the Biological Sciences branch of the University Library is a remarkable collection of natural history engravings and watercolours from the 19th century.

The collection includes six volumes of work by Bristolian artist Jane Steuart-Powell, whose prolific output included the six-volume *British Plants* (painted between 1833 and 1850) and the two-volume *British Moths and Butterflies* (1833-1855). Another accomplished artist, Sydenham Edwards, is represented by *New Botanic Garden* (published c.1812), two volumes of engravings from his watercolours.

The University's Botanic Garden has selected a number of these illustrations for a range of greetings cards available at the Garden's Welcome Lodge. Proceeds from the sale of these cards (priced at £1.50 each) will support the work of the Botanic Garden.

For more information, please email botanic-gardens@bristol.ac.uk. To find out more about the Botanic Garden, including opening times, please see www.bristol.ac.uk/Depts/BotanicGardens

Endnotes

1 A new discovery has shown the four-eyed spookfish to use mirrors, rather than lenses, to focus light in its eyes. The spookfish has been known for 120 years, but no live specimen had ever been captured. Last year, a rare live brownsnout spookfish was caught off Tonga by Professor Hans-Joachim Wagner from Tübingen University. Professor Julian Partridge of Bristol's School of Biological Sciences conducted tests that showed that the fish focuses light on to its retina using a multi-layer stack of reflective plates. The precise orientation of the plates within the mirror's curved surface is perfect for this.

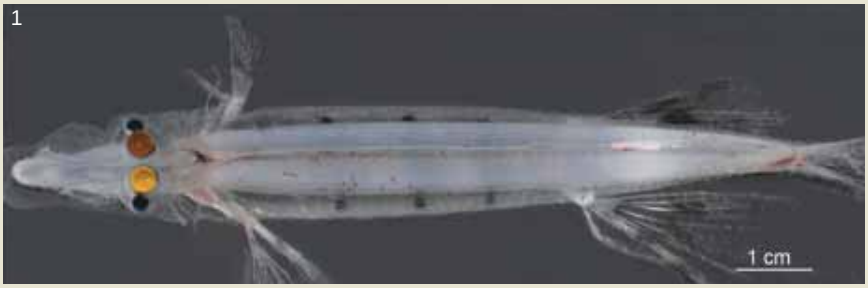
2 Academics from Bristol were part of a pan-European team that recently achieved a breakthrough in tissue engineering using adult stem cells, leading to a life-saving transplant operation. A young woman's diseased trachea was replaced by a length of cartilage grown from the patient's own stem cells in Professor Martin Birchall's lab at Bristol, and matured into cartilage cells using an adapted method originally devised by Professor Anthony Hollander for treating osteoarthritis. The operation was performed in June 2008 in Barcelona by Professor Paolo Macchiarini of the University of Barcelona.

3 'What is looking, exactly?', asked Dr Jonathan Miller (pictured left) and Professor Richard Gregory in one of the 2008 Bristol Art Lectures, which marked their 103rd season with The Creative Brain, a series of conversations between artists and scientists on neuroscience, perception and creativity. Other pairings included Professor Robert Winston and John Harle ('The saxophonist and the scientist'), Professor Semir Zeki and Antonia S Byatt ('Neuroesthetics, love and literature') and Professor Colin Blakemore and Daria Martin ('Art and perception: movement and stasis').

4 Autumn saw the arrival of a new tenant on the University precinct: an eagle owl, the largest owl species in the world, with a wingspan of around two metres. The owl, probably an escapee from a private collection, roosted in a sycamore tree on Woodland Road in the grounds of the Bristol International Student Centre, exciting local interest and featuring in a *Guardian* blog. It is believed to have left the area around Christmas.

5 Dr Heather Whitney, recently appointed Lloyds Fellow in the School of Biological Sciences, has shown in work carried out at the University of Cambridge and published in *Science* that bees see some flowers in multi-colour because of previously unknown iridescence of the petals. Iridescence, the optical phenomenon whereby a surface appears in different colours depending on the angle from which it is viewed, is used by insects, birds, fish and reptiles for species recognition and mate selection. The image shows the iridescence of a hibiscus flower.

1



TAMMY FRANK

2

3

ANNE COOKE

4

CHRIS BERTRAM

5

BEVERLEY GLOVER

If you need all or part of this publication in an alternative format, such as in Braille, in larger print or on tape, please telephone +44 (0)117 928 8895