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 specimen caught off Tonga by Professor Hans Koch and Winfried Wagner from Tübingen University, Professor Ulrich Fartard of Bristol's School of Biological Sciences, conducted tests that showed that the fish focuses light onto its retina using a multi-layer stack of reflective plates. The precise orientation of the plates within the retina's curved surface is perfect for this.

Endnotes

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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 10th season with The Creative Brain: a series of conversations between artists and scientists on neuroscience, perception and creativity. Other speakers included Professor Robert Winston and John Marr (‘The saxophonist and the scientist’), Professor Simon Critchley and Antonia S Byland (Neuroethics, love and literature) and Professor Colin Blakemore and Diana Martin (Art and perception: movement and stance).

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 seal, probably an escape from a private collection, roosted in a yew tree near the University of 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.

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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 fascinating 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, ‘I just had to hoof it 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.

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Death: theme and variations

‘Death is the domain of monks in Buddhist culture,’ says Ladwig. ‘They don’t usually officiate at other major life-cycle 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 Laos and Thai culture doesn’t recognise the same distinctions between public and private, says Ladwig. ‘Funeral care is 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. 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 creation of the 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 very relaxed,’ 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 Luang Prabang, in the north of Laos, for a 23-year-old man killed in a motobike accident two days before.

‘The family was in a state of shock, but they were still very friendly and open. 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.’
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 tells Nick Riddle.

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

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eneath 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 present with more serious medical or distressing situations: they don’t catch the end of words, or they mishear things,’ says Helen Pryce, a lecturer in 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 is 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 theatre. ‘One of the chief strategies at St Martin’s, the hospital where I did my training, is to teach people about those background noises, and how to cope with them,’ says Pryce.

Back from the dead

The more Ladwig has travelled between Europe and Asia, the less disjointed he feels coming back. ‘I recall returning from a six-month trip to India in my twenties, and being out of my mind for two weeks – I just didn’t understand the world any more. These days I get three or four days of jet lag and nothing the different smells and textures – walking on concrete again instead of sand, smelling the fallen leaves in autumn – and that’s it.

“Once you’ve been told ‘it’s just in your head’, it’s disheartening.”

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

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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.

Tales from the field

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.

Monks 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 monk 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 reasonable man and trained as 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: as 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 cultural environment, 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; people experience the hearing difficulty, because that’s what drives them to the clinic in the first place.’

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