Many alumni will be aware that I am currently engaged in a series of overseas visits: North America last autumn; Australasia this Spring; and (provisionally) the Far East next March. Future plans include a series of regional events in the UK. For the College is committed to keeping in touch with its former students. And it is clear from reunions both in Cambridge and in distant parts of the globe that continuing affection for, and loyalty towards, the College underpins the wider Fitzwilliam community. Often scattered across vast continents, alumni have gathered even in small groups to remember and celebrate what they have in common. On our travels on behalf of Fitzwilliam, my wife and I have received the warmest of welcomes overlaid by genuine interest and enthusiasm. This latest issue of Optima is integral to fostering that sense of community, in keeping its members up to date and allowing them to share in our pleasure and pride in both the College’s progress and individual activities and achievements. It remains important that the readers of Optima do not think of it as a newsletter about a community they once belonged to. Lifelong membership of a Cambridge college is precisely that, not limited to three years ‘in residence’ and extending beyond fond memories and a formative experience better appreciated in retrospect. The College’s own future depends on the goodwill, input, expertise, advice, generosity and active engagement of those who subscribe to its values and remain committed to sustaining and enhancing Fitzwilliam’s profile within the University of Cambridge.

Professor Robert Lethbridge
Master

Ray Kelly 1920–2008

Ray, who died in October, was a much-loved Founding Fellow and lifelong supporter of Fitzwilliam. More than 200 people, family and friends, current and former colleagues, students, and members of staff attended a memorial service in celebration of his life on 31st January. A full obituary and report will appear in the Journal.

Over 300 members of the College have made donations and pledges, amounting to over £57,000, towards the ‘Ray Kelly Room’ in the new library.

Signing the Cambridge Climate Change Charter

The Master and members of the Environmental Policy Committee with the newly signed charter. The Cambridge Climate Change Charter is a voluntary pledge to address the issues of climate change. Signing the charter commits organisations to developing action plans to ensure their good intentions turn into reality. Fitzwilliam is the third Cambridge college to make the pledge. The College’s environmental policy is available on the website at www.fitz.cam.ac.uk

Is there a Fitzwilliam member in the House?


Contact the Editor
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Please feel free to contact me with news, contributions and ideas for the next issue.

Copy deadline: 30 June
**Talking to you**

In March, current students will be calling about 1500 of our 8000 alumni. One of the aims is to tell you about the new regular giving programme which the College is launching as part of the 150th Anniversary Campaign. In these tough economic times, the more regular donations our students can attract from alumni, the more secure their own educational experience will be. As the number of participating alumni increases so, we hope, will the sense of shared community and confidence in the future.

Iain Reid (History, 1978), Director of Development

I'm a third year NatSci – I studied experimental psychology and philosophy of science last year and I'm doing chemistry this year. I'm also taking a Spanish option – they encourage scientists to do a language. I've enjoyed my time at Fitzwilliam so much – I'm really going to miss it. My friend had fun doing the Trinity Hall telephone campaign last year. I'm hoping to pick up some post-Fitz survival tips when we talk to alumni during ours!

Amy Coats is one of the twelve current students who will be calling alumni as part of the 2009 Fitzwilliam telephone campaign.

**Library – the half way stage**

There will be a tour of the new Library during the alumni and reunion weekend 25–27 September 2009.
That was then, this is now

“Though I was a student at Fitz for a very short time (one year PGCE 1973 -1974), it was an amazing time for me. I live in the USA so to return to Cambridge in July 2008 for the first time since 1974 and see the physical transformations that have taken place on the College grounds was very special. Oxford Road looks good and so does the new boathouse. I only wish I could also see the place with students going about their studies and try to get an idea of what the College is like today. It was a very, very close community in the early days of being a full College.

I have been involved with the International Baccalaureate (IB) since 1977 when I first went to the USA to set up the diploma programme at a small private school in New York City. The IB offers high quality programmes of international education to a worldwide community of schools.

More and more schools in the UK are implementing the IB as an alternative to ‘A’ levels. On my recent visit I found that my own school Portsmouth Grammar school was planning to introduce the IB in 2009.

After two years in New York I obtained a teaching position at the United Nations International School and then in 1983 I moved to New Mexico to help start a brand new United World College (UWC).

The first UWC was Atlantic College in South Wales and there are now 12 schools around the world. Their mission statement is: UWC makes education a force to unite people, nations and cultures for peace and a sustainable future. A very idealistic goal – but we are making a difference and taking small steps in the right direction.”

Peter Hamer-Hodges (PGCE, 1973)
peterhh@cybermesa.com
http://www.uwc.org/home

Green space

Property, energy and climate change ... sustainability, myths and financial reality

Andrew Waters (Land Economy, 1972), Past President of the Cambridge University Land Society, on some of the conclusions from the highly topical seminar he organised in October 2008.

With the UK experiencing an energy crisis, the question is do we change our lifestyles, or our energy policy, or both?

Dr Tim Jervis, Director of Sustainability at Pell Frischmann, and David MacKay, Professor of Natural Philosophy, Department of Physics, Cambridge University highlighted the inadequacies of the current levels of domestic energy production in the UK, and compared the efficiency of carbon-free energy production from renewable sources including wind, solar, hydro-electric, wave and tides.

Despite claims that our energy requirements can be satisfied entirely by renewable sources, the presenters concluded that this would be impossible unless vast areas, the size of Wales, were to be covered with wind farms. The reality is that renewable energy is likely to form a relatively small part of a larger energy production portfolio. Unless, that is, we all want to radically change our lifestyles by reducing consumption.

David MacKay’s view was that the “boring old” retro-fitting of insulation to the nation’s existing housing stock would be of very much greater energy-saving impact.

He also debunked another popular energy myth about switching off phone chargers. To general amusement he reported that he had had to plug in five phone chargers before his meter registered any increased energy use at all.

Angus McIntosh, Partner and Head of Research at King Sturge, called for more joined-up thinking about sustainability and efficiency of buildings. Much emphasis is placed on new energy-efficient buildings without enough thought about the energy-inefficiency of demolition and construction. For example, the offices of the sponsors, Berwin Leighton Paisner, dating from the 1930s, had been refurbished rather than demolished and rebuilt. All three speakers acknowledged that consistent long-term strategies and policies are required and not short-term headline-grabbing opportunities.

The Society’s current President is Emma Fletcher (née Veale, Land Economy, 1996). www.culandsoc.com

Green Space is for members’ news, comment and opinion on green matters.
We flew into the Galápagos from Quito and landed on the island of Baltra, where we met our group guide. I hauled my backpack on to a bus that took us to a tiny dock where we boarded a little transfer boat to take us across to another island. Finally we arrived at our home for the next seven days – a catamaran called Archipell II. First stop – to see the giant tortoises; amazing creatures that move in a way that I imagine dinosaurs might have moved. The boat cruised to Rábida Island where we visited a salt-water lagoon rich in wildlife and vegetation and also found a large sea lion colony – I was amazed at how unafraid of humans they were.

We went on to Bartolomé Island with its dramatic volcanic features where I learnt about the geological history of the island and also spotted some very rare Galápagos penguins of which there are only 800 pairs in the world. We had plenty of time to snorkel – I’ve been diving for many years but have never seen such astounding diversity and abundance. I will never forget swimming past sea turtles, sea lions nibbling my fins, huge rays swimming under me, or the four giant white-tipped reef sharks heading past. Next day we set sail for Santa Fé – it’s one of the smallest islands and Conolophus pallidus, one of the two species of land iguana found in the Galápagos, is found only on this island.

At the Charles Darwin Research Station on Santa Cruz we learnt more about his studies in the Galápagos and met scientists and conservationists working to help preserve the islands for future generations. We heard about the Galápagos Islands’ UNESCO protected status and the careful management of tourism. It is extremely important we protect areas of outstanding natural beauty for future generations and that we educate people on how this can be achieved. This trip greatly helped me with my course in Zoology, was truly a trip of a lifetime and has drastically changed my views of conservation.

Andrew Price’s study visit was supported by a grant from the Fitzwilliam Environmental Studies Fund. He is in his third year studying Zoology, and is also Captain of Rugby.
The class of ’79 Fitz matriculation photo hangs in my study and whenever I glance at it I realise my three years at Cambridge were probably the most formative of my life. I found religion and promptly lost a girlfriend, discovered Tory politics then declined a prospective Parliamentary candidacy, and had my public school-educated assumptions about class turned upside down among Fitz’s heterogeneous community.

Fitz then, as now, has a reputation for turning out top class geographers, which was not surprising as we had two future stars of the University geography department guiding us – Bob Bennett and Richard Smith. As a geographer, the highlight for me was the “field trip” to the Algarve in the 1981 Easter vac – not just for the sun but for cementing friendships.

My main extra-curricular interest was politics, both at the Union and as a member (and Chairman) of the Cambridge Tory Reform Group. I enjoyed mixing with the stream of cabinet ministers for whom participation in a Cambridge Union debate was seen as vital to their career prospects. One of my TRG guests was Edward Goldsmith, a leading Green Party advocate, whose warnings about man’s destruction of the environment were laughed at (though not by us geographers, of course!). Plus ça change.

The Somerset Society, formed by Peter Phippen (1979), me and a few others, was Fitz’s own debating club but its early demise showed the student body’s interest in sport, drinking and other pursuits trumped our attempts to elevate politics as a worthwhile social activity!

After graduating I spent six weeks in South Africa, returned via the overland route in 1984 and have lived here ever since. One of the most dramatic things to happen on the political front during my Cambridge years was the Gang of Four breakaway from Labour. In South Africa a similar thing is now happening with the formation of an ANC splinter party, the Congress of the People, which aims to strengthen the centre ground and repel the threat from the extreme left. In my work, which involves organising business events and community festivals in South African townships, I grapple with the consequences of the wasted apartheid years which politicians here are trying hard to confront, though solutions are elusive.

I was recently in England to launch my book on lighthouses. The book traces the story of how my great-great-grandfather, who graduated from Trinity in 1838, and the family firm restored Britain’s leadership in lighthouse optics and then supplied over 2400 lighthouses to 80 countries around the world. As any geographer would agree, a map is worth a thousand words.

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Lighthouses: the race to illuminate the world
Toby Chance and Peter Williams
New Holland Publishers 2008
The role of cocaine as an addictive drug of abuse in human society is hard to reconcile with its ecological role as a natural insecticide. It actually protects coca bushes from being eaten by insects without rewarding them, whereas cocaine stimulates the reward centres in the human brain. This paradox is often explained by proposing a fundamental difference in mammalian and invertebrate responses to cocaine, but Dr Barron’s work has demonstrated effects of cocaine on honeybees that parallel human responses. Honeybees, like humans, are strongly motivated by rewards (in the bee’s case, measurable by the enthusiasm with which they waggle-dance to convey the finding of a good nectar supply). By treating the bees with a low dose of cocaine, the likelihood and rate of dancing after foraging increased, consistent with cocaine causing the bees to overestimate the value of the nectar they collected.

“What we have in the bee is a wonderfully simple system to see how brains react to a drug of abuse,” said Andrew Barron, co-leader of the study, conducted at the Department of Brain Behaviour and Evolution at Macquarie University in Sydney. “It may be that when we know that, we’ll be able to stop a brain reacting to a drug of abuse, and then we may be able to discover new ways to prevent drug abuse in humans.”

The researchers conclude that the similarities between bees and humans seem likely to occur because the biogenic amine neuromodulator systems, which are disrupted by cocaine in both insects and mammals, perform similar roles in the brain as modulators of reward and motor systems. Ecologically, cocaine is an effective plant defence compound via disruption of herbivore motor control, but because the neurochemical systems targeted by cocaine also modulate reward processing, the reinforcing, addictive properties of cocaine occur as a ‘side effect’.

Andrew Barron (Natural Sciences, 1992), has been researching the honeybee’s response to cocaine. His work advances our understanding of the neural pathways involved in human addictions.

Andrew Barron

I feel really fortunate in that I’ve managed to turn the kinds of questions that fascinated me at College (how does the insect mind work, and what – if anything – are simpler animals thinking and experiencing) into a pretty decent career.

“...I'm a senior lecturer in the Department of Brain Behaviour and Evolution at Macquarie University in Sydney, and this year I received a significant Australian Research Council grant to develop my addiction research. One of the nice outcomes from all the media attention my work received has been that some good College friends saw it, dug my e-mail off the web and got back in touch...”

andrew.barron@mq.edu.au

Andrew Barron


“At Fitzwilliam I was supervised by Tony Edwards and Harry Hudson among others. Harry Hudson was particularly inspirational and very supportive. He did a great deal to foster my interest in organismal biology. I specialised in Zoology and then did my PhD in Zoology at Fitzwilliam between 1996 and 1999 studying insect behaviour. Now I live five kilometres from some of the best beaches in the world! I’m a senior lecturer in the Department of Brain Behaviour and Evolution at Macquarie University in Sydney, and this year I received a significant Australian Research Council grant to develop my addiction research. One of the nice outcomes from all the media attention my work received has been that some good College friends saw it, dug my e-mail off the web and got back in touch...”

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The buzz from Oz

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andrew.barron@mq.edu.au
I see you can dry viruses without damaging them… can you dry an old warship?

Fitzwilliam Fellow Nigel Slater explains how a splinter from one of the world’s most famous historic ships found its way into his Cambridge bioscience lab.

In early 2007 I was contacted out of the blue by Dr Mark Jones of the Mary Rose Trust. After a short preamble, he asked me an extraordinary question. “I see you can dry viruses without damaging them… can you dry an old warship?” For me this marked not only the start of a fascinating excursion into English maritime history – but also a chance to do some exciting research with my students.

Over the past few years, members of my research group in the Department of Chemical Engineering and Biotechnology have been exploring some of the issues that crop up in the manufacture of modern vaccines. By modern vaccines we mean such things as genetically engineered lentiviruses which are entering clinical trials for the treatment of cancers, and oral bacterial vaccines for immunity against diseases like influenza and anthrax. The viruses and bacteria from which these vaccines are generated are live organisms, and one of the big challenges is how to stabilize them so that they can be distributed and stored in a stable form before they are used in clinics.

We use freeze drying methods similar to those used in some instant coffee brands, though we have adapted the procedures to avoid ice crystals damaging live viruses and cells. We have also scaled the methods down so that we can work at a microscopic scale. Mark Jones at the Mary Rose Trust had seen the work on our website. I’m a chemical engineer, which means I like nothing better than scaling processes – both bigger and smaller – and so I was intrigued by Mark’s question. My subsequent visit to the Mary Rose in summer 2007 captured my enthusiasm completely.

As Mark showed me round he explained that the Mary Rose, flagship of King Henry VIII, was one of the first true warships of what was to become the Royal Navy. Built between 1509 and 1511, she was one of the first ships able to fire a broadside, but after a long, successful career she sank accidentally during an engagement with the French fleet in 1545. She remains the only 16th century warship on display anywhere in the world, is the centre of one of the largest artefact conservation projects, in progress for 20 years, and will also be the centrepiece of a new museum in Portsmouth.

The Mary Rose from the Anthony Roll, a list of all Henry VIII’s ships, 1548. By kind permission of the Pepys Library, Magdalene College, Cambridge.
But for all the intense historical interest, I learnt that conservationists know remarkably little about the chemical and biological processes operating in her ancient timbers – and without increasing our understanding of this the conservation of Mary Rose and her artefacts won’t be successful in the long term.

Mark had already freeze-dried a number of artefacts and when he gave me the opportunity to handle the preserved leather shoe of one of the unfortunate Mary Rose sailors – which resembled one of my teenage son’s trainers – it brought home the human aspect of his work. I accepted the challenge, and so started a fascinating and fruitful collaboration to develop new and improved methods in the treatment and freeze-drying of waterlogged archaeological wood.

A bit of scientific background is essential here. Wooden artefacts are rarely preserved in oxygen-rich marine environments because they are attacked by bacteria as well as by erosion. The typical result is that the cellulose-rich areas of the wood are removed by these two processes, leaving enlarged wood cell lumen (the central water-carrying channels) surrounded by lignin-rich cell walls. Fortunately, a significant proportion of the Mary Rose was buried relatively rapidly under silt and her timbers survived in the anoxic (i.e. oxygen-depleted) environment.

Ironically, however, removing the artefacts from the water then posed a danger, as drying wood becomes fragile. To solve this problem, the conservationists replaced the lost water with an inert filling material by spraying the timbers and artefacts with polyethylene glycol (PEG), with the addition of a biocide. Typically in oak timbers, a sound core of little-degraded, cellulose-rich wood then remains surrounded by an outer layer of degraded, lignin-rich wood of variable thickness and structural quality. After the stabilising PEG spraying treatment, which takes many years, the wood is then dried. The long period of spraying at the Mary Rose is planned to come to an end in 2011, when the hull will be slowly dried out, with conservation completed in 2016.

The other significant chemical engineering problem is that historic wood, buried in marine sediments over long periods of time, can also become mineralized by the formation of metal pyrites. On exposure to air the pyrite inclusions are oxidised, releasing sulfuric acid that can attack cellulose in the wood – reducing its mechanical strength. The area of major concern for the Mary Rose is this so-called sulfur problem in ship timbers and wooden artefacts and the successful drying of these waterlogged objects following stabilisation with polyethylene glycol.

When I was contacted by a third year Cambridge Physics undergraduate, Sam Jones, who wanted to do a summer project on some aspect of archaeological preservation, we were able to put two and two together and turn the Mary Rose problem into one we could investigate in our lab – and at very small cost. We obtained some waterlogged splinters of wood from the Mary Rose – smaller than a fingernail – and loaded them into our microscopic freeze dryer. By observation of samples through a microscope Sam was able to measure the rate of drying and its dependence upon the structure and grain of the wood. Sam then moved to Portsmouth and carried out further work in which he explored the effectiveness of magnesium phytate to extract iron salts from waterlogged timbers.

From an academic perspective, a scientific paper has been written and will shortly be submitted for publication in an international journal. We believe that Sam’s work will enable us to design an effective strategy to ameliorate the sulfur/iron problem in archaeological wooden objects and to optimise the freeze-drying process.

Professor Nigel Slater will be giving an illustrated talk on his work at the Reunion Weekend in September.

www.cheng.cam.ac.uk/research/groups/biosci
www.maryrose.org
Optima, Fitzwilliam College Newsletter

Dancing beneath the red star – Fitzwilliam Winter Ball December 4th 2008

Fitzwilliam winter weather conditions

The Master’s Tour to North America and Canada – October/November 2008

Vancouver

There will be a full report in the Journal.
Q&A: undergraduate support

Many Fitzwilliam alumni, often those who’ve been beneficiaries in the past, donate to ‘student support’. With the financial climate changing so rapidly Optima asked Paul Chirico, Senior Tutor, to answer some questions about undergraduate support in 2009.

What is ‘student support’?
The cost of a Cambridge education is shared between the Government, the Colleges and certain associated Trusts, and our individual students and their families. Each makes a significant investment. Like the University and the Government, Fitzwilliam College is committed to the principle that no potential student should be prevented from coming to Cambridge, and from thriving here, on financial grounds.

We use the resources available to us to distribute maintenance bursaries, according to need, with the aim of ensuring that we are a truly accessible college – though we would like to do more, both for undergraduates and for postgraduates. We reward academic excellence with prizes and scholarships for first-class Tripos results. We also seek to enhance the broad educational experience of our junior members by offering additional financial support for musical and dramatic activities, project and conference expenses, certain sporting costs and vacation travel.

How much does it cost to study at Fitzwilliam?
A single UK undergraduate without dependants will be liable for University Tuition Fees of £3,145 pa, but these need not be paid at the time of study, since a government loan is available for that full amount. So it does not cost a UK undergraduate, up front, to study at Fitzwilliam (though each will therefore graduate with about £10,000 of debt for tuition fees alone).

But it does, of course, cost to live in Cambridge. There are various estimates of that cost, which depends on an individual’s circumstances and lifestyle – we find £7,500 pa a reasonable figure.

Don’t all undergraduates get loans these days?
All UK undergraduates are eligible for a government loan for the full tuition fee (£3,145 pa), and for living costs up to £4,625 pa. (Students with family income below a certain level, however, are eligible for funding which is part loan, part grant.) Those taking the maximum loans will graduate with a debt to the Government approaching £25,000, which becomes repayable in instalments on receipt of a salary above a certain level (currently £15,000).

What grants are available?
Grants are available from a number of sources, primarily the Government, the University and the College. These are awarded on a sliding scale based on the ‘residual household income’ (RHI) of the student’s family, which is assessed by the Local Education Authority. A maximum total (from those three sources) of £6,485 pa is presently available to those students with an RHI up to £25,000. Currently, reduced grants are available up to a maximum RHI of £60,000, though the public funding scheme changes from year to year.

How many students receive grants or bursaries?
In 2007/8, 184 of our undergraduate students received grants or bursaries either from the University’s Cambridge Bursary Scheme or the College. Of these, 135 individuals received one or more award directly from the College (including 54 maintenance bursaries and 98 travel awards). This academic year, 2008/9, following a large increase to the maximum RHI (from £39,000 to £60,000), the number of eligible students will be significantly greater – though the Government has announced its intention to reduce the limit once more from 2009/10.

What is the funding gap per student?
It’s different for each student. On 2008/9 levels, UK undergraduates receiving full grants both from the Government and from the Cambridge Bursary Scheme (that is, those with a RHI below £25,000) have a shortfall of around £1,515 pa on the accepted figure for living costs. (They are, however, eligible for a loan of £3,355 pa). Those from families with a RHI above £60,000 receive no grants and thus (after taking out the maximum loan of £4,625 pa) have a shortfall of £2,875 pa on the £7,500 estimated cost of living in Cambridge.

What level of support can Fitzwilliam College offer its undergraduates?
In 2007/8 the College was able to distribute approximately £24,000 in maintenance grants and £21,000 in travel awards. In addition we make a modest contribution to the grants given by the Cambridge Bursary Scheme (which are distributed by the Isaac Newton Trust), and from which our students were awarded a total of £135,000. It is common, too, in the case of postgraduate students, where our resources at present are very limited and the need great, for us to leverage quite substantial awards from Trusts and other bodies.

Our students are resourceful: they are prepared to work during vacations, and to accrue large debts in the pursuit of their studies. But the immediate funding gap is wide, and targeted financial support from the College is essential to allow hard-working individuals a fuller engagement with all Cambridge has to offer.

Please note that all figures (unless otherwise stated) relate to 2008/9, and to single UK undergraduate students; funding arrangements differ for postgraduate students, EU or Overseas students, mature students, those with disabilities, with dependants, or with substantial external sponsorship.
Career network: two women with tips to share

Sunita Patel and Faye Jones (both MML, 2001) have just registered as alumni contacts on the Fitzwilliam Career Network. In 2003, they both won places on Momentum, Prudential’s leadership development programme, and already have plenty of tips to share with students and early-career graduates.

Faye and Sunita both studied French and Spanish, and travelled in Mexico during their year abroad; they graduated in 2005 and pursued different careers, one in market research and the other in consumer PR. Faye was an internal candidate for the Momentum programme having worked in Prudential’s HR department for about 6 months. Her enthusiasm encouraged Sunita to apply for the communications stream, with the result that this year, of a select group of 21 men and women of 10 nationalities, speaking some 30 languages between them, two are Fitzwilliam women.

Recruited for their potential to be on the company’s leadership team in ten to fifteen years’ time, both women are at the start of a six- or seven-year process, which will involve them changing roles and moving to other countries every two years. Each participant works in a different function (General Management, Communications, HR, Audit, Finance, Risk) in various business units across the UK, Asia and the US. “We have a day-to-day role, but we’re also given access to senior management, mentors and specific training.” Currently working in the Group Resourcing & Development team, Faye also programme-manages the company’s ‘Raw Talent’ initiatives – development for those in the earlier stages of their careers. Sunita works within the Group Media Relations team, which is responsible for financial and corporate communications both in the UK and internationally.

Enthusiasm …

“MML at Cambridge requires two languages – one can be at beginner’s level. I chose to apply to learn Spanish from scratch… How do you convince someone at interview that you have a great aptitude for a language that you’ve never spoken?”

Sunita

Change and uncertainty…

“I arrived in Seville for my year abroad with a year's worth of clothes, photos of all of my friends and even a huge (and heavy!) Spanish dictionary. Perhaps more useful would have been a map of the city and some accommodation – I had neither! The Spanish are welcoming and incredibly open: being reserved and over-polite wouldn’t work in this new culture – letting go of those reservations helped me make some great friends. The whole experience gave me so much confidence.”

Sunita

Prudential: ‘Females at work 1930s’
“It’s partly about the mix of people at Cambridge,” said Faye. “I learnt the value of being part of a melting pot of different cultures and academic disciplines.” Leaders of the future need to have first hand experience of diversity, she thinks. Among the members of the Momentum programme are people with extra-curricular interests as diverse as human rights activism, sushi cookery, theatre directing and running youth groups.

They are particularly proud to be involved in a leadership programme which is about ‘shifting the culture’ of an organisation. “It’s exciting to be part of that as a woman, and possibly changing the currently male-dominated management of financial services in the future,” says Sunita. It’s all rather a far cry from the opening of the ‘Lady Clerks’ department in 1871 – Prudential was the first company in the City of London to employ women. “The gender balance is not yet quite 50/50 and the only way to change that is to attract more outstanding female applicants – although the programme is about attracting the best, regardless of gender, there is some work to be done to make financial services a more attractive career path for women.”

Fitzwilliam – still with a gender balance of less than 50/50 – celebrates 30 years of female undergraduates this year. These two women both agree that their time at Fitzwilliam helped equip them with the skills to make the most of this particular opportunity. “Like Fitzwilliam, we’re constantly looking for bright, high potential candidates. Applications for Momentum open in May 2009.”

Fitzwilliam’s Career Network allows Fitzwilliam students to benefit from the professional advice and guidance of Fitzwilliam members.

www.fitz.cam.ac.uk/alumni

Prudential plc is an international financial services group. Momentum is its global talent network.

www.prudentialmomentum.com

Resilience…
“Finding the job for my year abroad was quite a long haul. I started looking for a role in September of my second year. I went to milk-round presentations aimed at Finalist Undergraduates to make contacts with offices in Europe or South America. Eventually I had some tempting offers, and clinched the job with Ogilvy & Mather advertising in Paris with a telephone interview in French!”

Faye

Diversity…
“Sunita and I shared responsibility for the Fitzwilliam Linguists’ Society, liaising with Supervisors and Directors of Study, past and present, to organise extra-curricular activities. I also danced in the Cambridge University ‘Off-beat’ dance team – we were ‘Southern Universities Off-beat Champions’ in 2001!”

Faye

COME AND CELEBRATE 30 YEARS OF WOMEN AT FITZWILLIAM ON 13th JUNE – see page 3.
This is how things are

Michael Potter explains what he discovered when he studied a set of notes written by a philosophy student at Cambridge just before the First World War.

Ludwig Wittgenstein’s *Tractatus Logico-Philosophicus* is one of the most important philosophical works ever published and its final sentence, ‘Whereof one cannot speak thereof one must be silent’, is one of the most quoted. The story of how the book came into existence has been endlessly repeated but is no less remarkable for that. Wittgenstein wrote it while on active service in the Austrian army during the First World War, but he began work on it when he came to Cambridge in 1911 to study for a research degree in philosophy with Bertrand Russell as his supervisor. (Now it would be a PhD, but in those days it was called a BA by research.) At the end of his second year at Cambridge Wittgenstein decided to spend a year communing with his soul in Norway, and just before he departed he left Russell with a set of notes – nowadays known as the Notes on Logic – summarizing the work he had been doing under Russell’s supervision. These notes are the subject of the book I have recently completed.

Why, then, did I devote a whole book to studying a rather jumbled set of notes, amounting to fewer than 7000 words, rather than to the book which those notes eventually became? It is a fair question. My original intention, when I first put finger to keyboard back in 2004, was actually to write a much more ambitious book that traced the development of Wittgenstein’s thought from when he arrived at Cambridge as a philosophical novice in 1911 until he completed the *Tractatus* in the summer of 1918. But somehow I got stuck in October 1913, the part of my book devoted to the Notes got ever longer, and even the part where I explained the thoughts Wittgenstein had in Norway the following year never quite got written.

One reason for this is the tantalizingly complicated way the Notes were compiled. Wittgenstein dictated most of them in German to a shorthand typist (in Birmingham, as it happens, because he was there visiting an undergraduate friend of his). As far as I can tell, he read out to the typist remarks from a kind of diary he had been keeping from day to day of his philosophical thoughts. But the typescript that resulted from his session in Birmingham has not survived: what we have instead is a translation into English made by Russell several months later. Another part of the Notes, to some extent a sort of gloss on the Birmingham typescript, was dictated to another shorthand typist (this time in English) in Russell’s rooms at Trinity. These complications inevitably affect the task of interpretation. In places, for instance, the Notes seem to me not to make sense, but is this because Russell mistranslated the German, because what Wittgenstein originally dictated was wrong, or – in most cases the most likely explanation, no doubt – because I have simply failed to understand the point he was trying to make?

Part of the allure of the Notes, therefore, is like that of a particularly difficult crossword puzzle. But once
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the puzzle is solved, it turns out to pay some interesting dividends. One of these dividends is biographical: Wittgenstein was by any standards an unusual thinker, and one of his most remarkable features is that he had many of his most fruitful thoughts astonishingly early; he compiled the Notes only two years after he began his formal study of philosophy, and yet it turns out that they contain many of the ideas for which the Tractatus is now famous.

But the biggest pay-off of studying the Notes (for me at least) has been not biographical but philosophical. When I tried to work out just which of the ideas in the Tractatus were already present in the Notes, I came to realize that I hadn’t really understood some of these ideas properly at all. Take the picture theory, for instance. This is the idea, prominent in the Tractatus, that propositions function like pictures: uttering a declarative sentence is somehow like holding up a picture and saying, ‘This is how things are’. Famously, Wittgenstein is supposed to have got the idea for this theory from reading a story in a newspaper about the practice in Paris law courts, where (it seems) witnesses to a road traffic accident were invited to describe what they had seen by positioning toy cars to form a kind of model of what had happened. But Wittgenstein didn’t read this story until late in 1914, a year after he had compiled the Notes. So the Notes can’t contain the picture theory, can they?

In a sense, of course, this is right, but the more I thought about it, the more I realized that Wittgenstein’s mention of pictures in his explanations of his theory is something of a blind alley. This is because pictures are inherently spatial, and to the extent that they represent possibilities as to how the world can be, those possibilities are spatial: they are ways that objects (in the case of the traffic accident, cars) can fit together in space to form facts (the fact, for instance, that your car rammed mine from the rear). What I realized was that Wittgenstein’s primary point was not this at all: the way in which the parts of a proposition fit together cannot ultimately be spatial, because if it were, we would be unable to think about things that are non-spatial. Wittgenstein’s point, I think, was rather one about the structure of thought, namely that it is incoherent to try to suppose that this structure could be different from the structure of what we are thinking about. And this point is one that, I discovered, Wittgenstein had already grasped very well by the time he wrote the Notes on Logic. So what went on in the Paris law courts can’t have been at the heart of the picture theory at all.

Eventually, Wittgenstein came to think that this insight – that the structure of thought and the structure of the world are identical – allowed him to solve – or, better, to dissolve – all the problems inherent in a way of viewing the relationship between thought and the world that has come down to us from Descartes via Locke, Berkeley and Kant.

But he can’t possibly have realized all of that by 1913, when he was still a student at Cambridge with just two years of philosophical training to his name. Can he?

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Wittgenstein’s Notes on Logic
Michael Potter
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I competed in the Ironman World Championships in Hawaii last year. The Ironman triathlon is the hardest test for any endurance athlete. It consists of a 2.4-mile swim, followed by a 112-mile bike ride and then a 26.2-mile run.

In Hawaii the swimming race for elite athletes started at sunrise, 6:45 in the morning – I was very nervous because of the high waves. It was the hardest thing I have ever experienced in my entire life. When I reached the beach I realized that I had improved my swim time by 15 minutes, and so I ran fully motivated to the bike. I felt sick from all the salt water I’d swallowed but when I got my strength back I enjoyed the cycle ride through the lava desert of Big Island very much. For the first part of the marathon run I kept my 3.30h pace, but the second part was painful because my right shoulder was injured. I got breathing problems but still finished the whole race in under 12 hours.

I started as a Hare and Hound cross-country runner 5 years ago, and am now an elite triathlete with the Austrian National team.

Dr Silke Pichler was a graduate student at Fitzwilliam in 2005 and still runs for the College in the Chariots of Fire and Varsity races.

Her main sponsor for the next two years is blueseventy but she is looking for more sponsors for Ironman Switzerland and Ironman UK 2009. Contact Silke on sp401@cam.ac.uk or consult http://people.pwf.cam.ac.uk/sp401