Volume 5 Number 8 November 1994

MONTAGE

NEWS FROM THE CAMPUSES OF MONASH UNIVERSITY

Report reveals a tale of two very different cities

While many Australians are migrating to the warmer climate of Queensland, Melbourne and Sydney remain the focus of Australian business investment and construction, according to a Monash University report released recently.

Dr Kevin O'Connor, author of the university's Centre for Population and Urban Research 'Capital City Report', said population trends were providing a misleading impression of the pattern of development in Australia.

He said that while reports on the Australian economy tended to focus on growth in Queensland and regional areas, "such interpretations fail to understand the significance of the larger cities in the operation of the modern information and knowledge-based economy".

The report showed that Melbourne and Sydney had retained a strong share of employment in manufacturing and finance, and business services. It also found that both New South Wales and Victoria had experienced significant capital investment.

"In effect, Australia has a core where the global and national business is carried out, and a periphery where much of the activity is serving local population trends. This distinction has important consequences for the long-term future of the nation, as the core locations may need some special attention in infrastructure and planning," Dr O'Connor said.

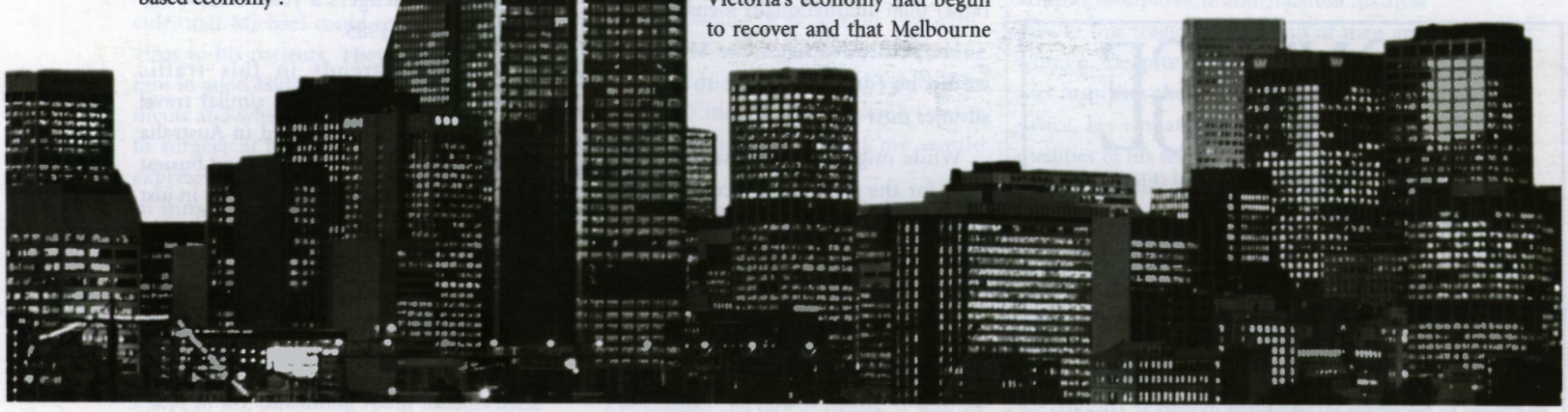
The report also found that Victoria's economy had begun to recover and that Melbourne had consolidated its role as the nation's major manufacturing centre.

However, Dr O'Connor said Victoria's unemployment rate would remain high, as companies were not employing people who had lost their jobs in the last downturn.

The report described Sydney as Australia's global city because of its high share of international migration, air traffic and business travellers.

Visa figures show that Sydney attracts more than half of those who travel to Australia for business, while Melbourne attracts just 21 per cent. Sydney attracts 44 per cent of those who come to Australia for short-term work, while Melbourne gets 17 per cent.

Continued on Montage 2



Spike

Fire Fans the Flames of Knowledge

Melbourne's media were all fired up last month, after the 1 pm ABC news had announced that Monash University's main library was "well alight".

But the fire, which was isolated to the plant room on the roof of the library, had already been extinguished by the time the fire engines arrived a few minutes later.

That didn't stop newspapers and radio stations ringing the university's Public Affairs Office for the rest of the afternoon, however, to find out what damage the fire had caused to life and property.

Unfortunately for the media, the fire, started by plumbers when removing old equipment with a welding torch, was out before any serious damage was done.

Hit and Miss

Monash University's Accident Research Centre could be forgiven for feeling a little insecure this month after receiving a letter addressed to the Accidental Research Centre.

MONTAGE
NEWS FROM THE CAMPUSES OF MONASH UNIVERSITY

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Staff writers: Georgie Allen, Juliet Ryan, Sue Hobbs.
Editor: Georgie Allen, Public Affairs Office,
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NOW & THEN

25 Years Ago

On 13 October at 4.10 pm, a 40 mm Bofors anti-aircraft gun was fired on the campus. Apart from those involved in the test firing, it appears that no-one was aware that a shot had been fired.

This was as expected, but now that experimental evidence has indicated that an artillery piece can be fired without disturbing anyone who may be asleep at his or her desk, Messrs G. Arndt and R. H. Brown plan a regular series of firings for the advancement of Production Science.

15 Years Ago

With a few exceptions the standard of science reporting in the Australian press left a great deal to be desired, Monash science editor Frank Campbell told a recent seminar at La Trobe University.

And the situation would not improve, he said, until newspapers made a practice of employing specialist science writers, and scientists, for their part, took the task of communication more seriously.

Mr Campbell was speaking at a seminar 'Bridging the gap between science and the media', organised by La Trobe University as part of the university's Community Week.

5 Years Ago

A clear picture of the academic structure of Monash University after 1 July 1990 has emerged from recent decisions of the councils of the university, the Chisholm Institute of Technology and the Gippsland Institute of Advanced Technology.

After that date, the university – an amalgamation of the three institutions – will consist of 10 faculties spread over three campuses in Caulfield, Clayton and Frankston, together with a constituent university college in Gippsland which, among other things, will be responsible for distance education.

The enlarged Monash University will cater for more than 25,000 students and will have a budget approaching $200 million a year.

This Month Last Year

AIDS is the most common fear of Melbourne teenagers, according to research by two Monash University academics.

Dr Eleonora Gullone and Dr Neville King have found that the killer disease scares a majority of local 15 to 18-year-olds.

But AIDS was not the biggest fear for younger age groups, who were more frightened by death, kidnapping and not being able to breathe.

A tale of two cities

From Montage 1

Dr O'Connor said these "staggering" figures indicated that Melbourne may be losing out in the "global network", and that the city's economic base may be nationally rather than internationally focused.

He predicted that some Melburnians would be forced to move to Sydney to advance their careers.

While migration into Australia fell in 1993 for the fourth consecutive year, the proportion of migrants settling in New South Wales was higher than in previous years.

New South Wales attracted 43.2 per cent of immigrants in 1993, while 23.6 per cent went to Victoria, and 14.7 per cent to Queensland. The Northern Territory was the least popular, attracting only 0.5 per cent of Australia's 66,000 immigrants.

The report found that growth in international air passenger traffic continued to favour Cairns and Brisbane. Both recorded increases in their share of traffic, at the expense of Sydney and Melbourne.

Dr O'Connor said these shifts had occurred as international air travel into Australia increased in 1993 to more than 10 million passengers a year, double the level recorded in 1985.

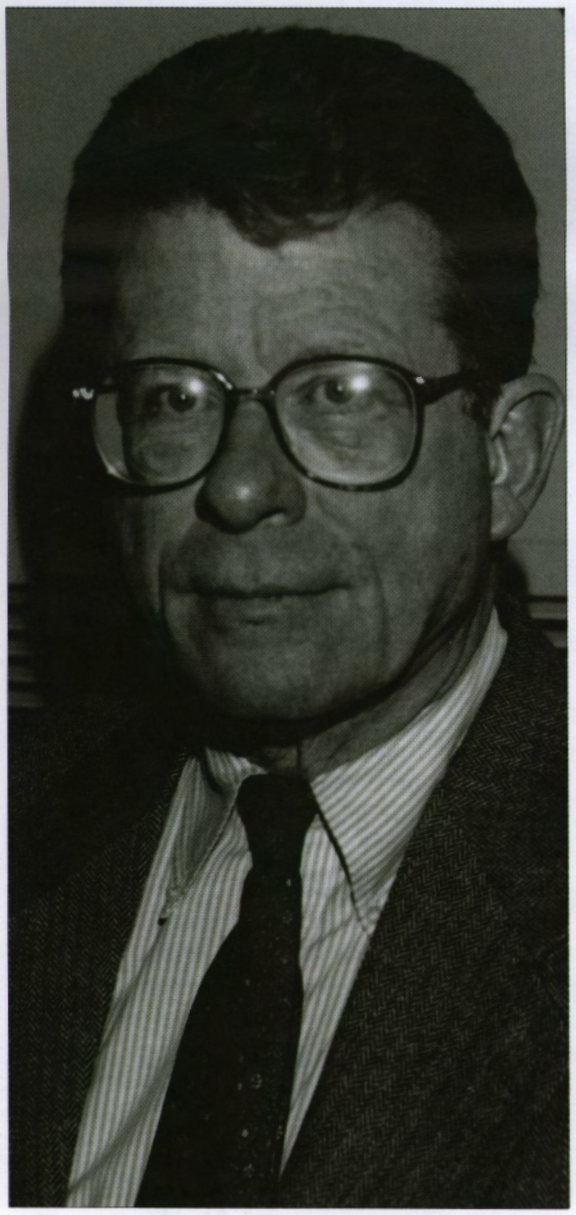
"If current trends in this traffic continue, and travellers have similar travel patterns to those who arrived in Australia recently, Brisbane will be the second busiest international terminal in the country in just a few years," he said.

Dr O'Connor said planning and management of Australia's capital cities deserved closer attention because of their role in shaping the economic climate and long-term development of the nation.

BY GEORGIE ALLEN

"My activity was: when questioning the bitches, I beat them so that their skirts fell off and then set fire to their asses until they became burned out messes, and then beat them until they were all turned around and did whatever I could so that they croaked and their answers ended." *Extract from Khmer Rouge prison archives.*

Confessions of a lost generation



A Monash historian is studying more than 200,000 pages of documents found in a secret extermination facility in Cambodia during Khmer Rouge rule in the 1970s.

The documents – confessions extracted from prisoners while being tortured, as well as records of the behaviour of the interrogators – have been microfilmed by Cornell University for analysis.

Leading specialist in Cambodian history, Professor David Chandler, has received a grant from Monash vice-chancellor Professor Mal Logan to purchase the microfilms, which will be stored in the university library.

Professor Chandler believes the documents may contain some previously undiscovered information about the Khmer Rouge and its secretive leader, Pol Pot.

He said the 'confessions', several up to 1000 pages long, made depressing reading: "It is emotionally draining to encounter so much pain, so much cruelty, so many innocent lives lost."

The confessions include dossiers on nearly all the major figures in the Communist Party of Kampuchea, purged by the regime, and thousands of dossiers of others less important to the party.

The interrogation facility, known by its code name S-21, was turned into a genocide museum by the Vietnamese, who invaded Cambodia in January 1979.

It is believed that more than 14,000 men, women and children passed through S-21 between the end of 1975 and early 1979, with only five surviving.

Professor Chandler said that using the documents as historical sources posed a problem because the confessions had been extracted under torture.

"Because the prisoners had to admit an all-embracing guilt, the texts are not helpful in determining or demonstrating a person's subversion of the party, although the longest confessions were probably from people suspected, rightly or wrongly, of the most serious crimes."

But he said the documents were valuable because they provided evidence of the phobias of the Khmer Rouge: "Taken as a whole, they are a bleak testimony to the extent to which the Red Khmer were riddled with brutality and distrust.

"What the party found threatening or disloyal, however, constantly changed. Its enemies, like all counter-revolutionaries, were moving targets."

Professor Chandler was amazed at the huge quantity of documents relating to the imprisonment, torture and execution of Cambodians, who were perceived as enemies of the regime.

He said it was as if the interrogators believed that by producing massive amounts of paper work, they were legitimising their actions. It also seemed to be a way of ensuring that the Khmer Rouge leaders didn't turn on them as well.

Professor Chandler is also interested in the wider issue of "one-sided killings" as a 20th-century phenomenon, such as in Rwanda recently and in Europe earlier this century.

He believes there are similarities between the Cambodian style of extracting confessions under torture and those extracted in the show trials of the Stalin period in Russia, as well as those taken from "enemies of the people" in China and Vietnam.

The bureaucracy and the process of dehumanisation was also comparable to the concentration camps of Nazi Germany, he said.

Once he has finished ploughing through the documents, Professor Chandler hopes to write a book that will discuss the S-21 archives in the context of the Khmer Rouge regime and in the wider context of genocidal behaviour in the modern world.

Monash industrial design student has the future in sight

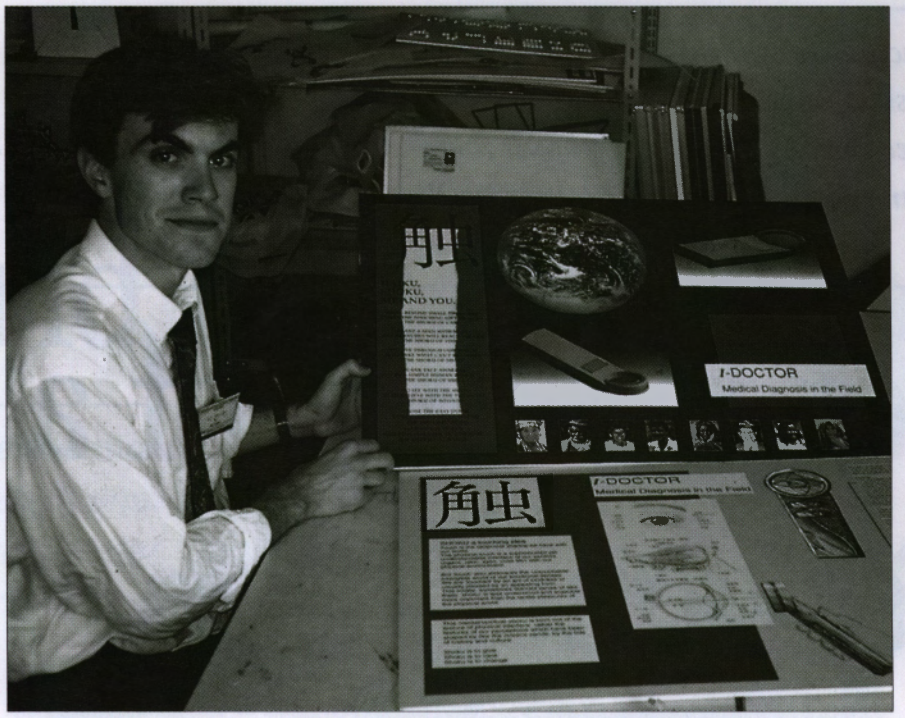
Mr Ben Walker, a Monash University industrial design student, has won an international award for his design of a digital unit that can be used in the diagnosis of cataracts.

Mr Walker won the award at an international design workshop conducted by the Sozosha College of Design in Osaka, Japan, which was attended by about 100 students from around the world.

His digital unit can take very accurate readings of eye health by picking up and reading from the reflection in the retina and storing the information in digital form.

The unit is useful in remote or hostile areas where there are limited medical resources and a lack of doctors, such as third world countries and outback Australia.

The information stored in the digital unit can be taken, or beamed off a satellite dish, to a hospital or medical clinic for analysis and an accurate diagnosis of eye health.



Mr Ben Walker displays his award-winning design of a digital unit that can be used to diagnose cataracts.

Mr Walker said he had been inspired by Fred Hollows, whose biography he had read last year, and the legacy of work that had continued in his name. He plans to approach the Fred Hollows Foundation with his design once it is completed.

The trip to Japan was sponsored by Monash University's Centre for Industrial Design, which supplied financial assistance as well as Japanese language courses for Mr Walker and two fellow students, Mr Simon Kooymans and Mr Chris Hortis, before their departure.

The workshop provided the three Australians with an opportunity to meet and work with Japanese designers from different industries. It also allowed them to exchange ideas with students from graphics and industrial and interior design backgrounds.

Guest lecturers included representatives from Japan's automotive industry, engineers involved with Osaka's new international airport and cutting-edge computer software designers.

Workshops centred around the theme of 'Shoku', meaning 'to touch', and students were encouraged to explore the full range of design possibilities suggested by human sensory perception.

Mr Walker said the theme was challenging and the structure of lectures and workshops provided an environment in which an understanding of the related design concepts could emerge.

"It was part of the design evolution. My design came out of the idea of our hands and our eyes and the idea of touch as being able to give something – as in a touching gesture," he said.

The award came as a complete surprise to Mr Walker, as organisers had deliberately withheld knowledge that work was to be judged in order to foster an environment of cooperation and communication.

Mr Walker said the ploy was effective, for despite the language differences, the group of students worked well together and learned a great deal from watching how others approached common problems.

"It was a very open studio environment with lots of interaction between lecturers and students. It was interesting to see how students from different countries approached design and the process of design," he said.

Following Mr Walker's success and the high praise received by all three Australian participants in the workshop, the centre is considering initiating a similar event for Monash in the future.

Mr Walker has continued to develop his design concept since returning from Osaka, and will be submitting a detailed proposal to the Seventh International Foundation later this year.

By Jamie Silver

Australia's aluminium industry – how healthy?

Monash University's Department of Social and Preventive Medicine is conducting a $1.7 million study of the health of more than 10,000 people employed in the Australian aluminium industry.

Past and present employees of Alcoa of Australia Limited will participate in the 10-year study, which has initial funding for three years.

The study, funded by Alcoa, is designed to isolate possible hazards within the aluminium industry that could contribute to cancer and respiratory diseases.

Overseas studies have found tenuous links between workers in aluminium smelters and diseases such as leukaemia, brain tumours and cancers of the urinary system and pancreas.

There are also reports of a link between people working in smelter potrooms and respiratory diseases, in particular asthma.

Although previous studies have looked at the relationship between workers in aluminium smelters and the incidence of both cancer and respiratory disease, this is the first study that has included workers in bauxite mines and alumina refineries.

The employees taking part in the study work in bauxite mines and alumina refineries in Western Australia and in smelters, a rolling mill and a power station in Victoria.

Overseas studies have found tenuous links between workers in aluminium smelters and diseases such as leukaemia, brain tumours and cancers of the urinary system and pancreas.

More than 6000 current employees will be interviewed and will be given lung function and skin prick tests as part of the baseline study. More than 3000 employees who have left the company since 1982 will be included in the study to determine mortality rates and cancer incidence.

As well as taking a detailed employment history, investigators will look at lifestyle habits such as smoking and drinking so that the effect of such habits can be separated from the effect of any occupational hazards.

The investigators will then monitor the health of employees, with their permission, through the state health statistics.

One of the chief investigators, Ms Kaye Robinson, said it was the first time a study in the Australian aluminium industry would monitor the health of workers in the present and into the future rather than retrospectively.

"Conducting the study over a long period of time will give us the opportunity to isolate the working conditions and lifestyle habits that may contribute to the development of such diseases."

It was particularly important to monitor the health of new employees to see how respiratory diseases developed, in which working environments and with exposure to which specific chemicals.

Ms Robinson said chemicals that would be included in the exposure matrix were Coal Tar Pitch Volatiles (CTPVs) and Polycyclic Aromatic Hydrocarbons (PAHs).

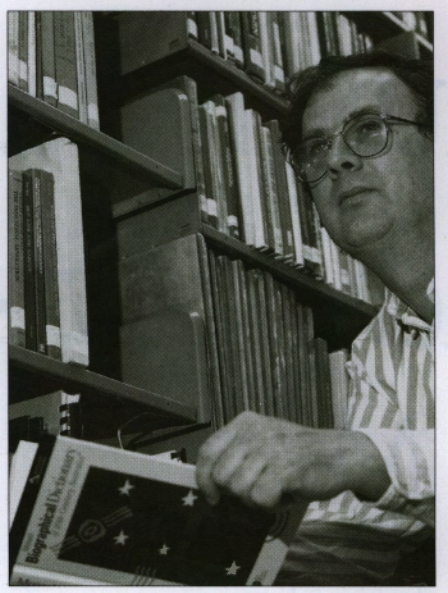
The study has four chief investigators: Professor John McNeil, head of the Department of Social and Preventive Medicine; Dr Malcolm Sim, senior lecturer; Ms Kaye Robinson, senior research fellow; and Clinical Professor Bill Musk from the University of Western Australia. Field work will be supervised by Ms Hilary Young, a research nurse in the Department of Social and Preventive Medicine.

An advisory committee comprising independent scientific consultants, representatives of Monash, Alcoa and the Australian Council of Trade Unions has been established to oversee the work of the study team.

BY GEORGIE ALLEN

Redefining who's who in Australia

The editor of the Monash Biographical Dictionary of 20th Century Australia *gives us the last word in biographical dictionaries.*



Mr John Arnold.

Mr John Arnold, editor of the new *Monash Biographical Dictionary of 20th Century Australia,* has just spent two years arguing about people's lives.

"Selecting 2200 people who have had the greatest impact on Australia since federation was not an easy task – but it was a lot of fun," Mr Arnold said.

"We had a series of lunch meetings at Jimmy Watson's, where we asked 15 experts in a number of fields each to bring a list of 20 people who definitely had to be included," he said. "And we just argued it through. We ended up including Jimmy Watson himself for his contribution to the wine industry, but of course I still paid for the lunches."

But the selection process for the dictionary was based on far more than amiable lunchtime debate. Mr Arnold and his editorial team combed reference books, spoke to authorities in a range of disciplines from around the country, and exhaustively argued who should be in or out.

The end result is what he hopes will be the definitive reference for those who need an accurate and accessible guide to the lives and times of variously great and infamous Australians.

The dictionary was compiled by a team led by Mr Arnold, who is deputy director of the National Centre for Australian Studies at Monash, the centre's director, Professor Peter Spearritt, and Ms Diedre Morris, editor at Reed Books. Its publication was jointly supported by the university and Reed Books.

Mr Arnold said the criteria for selecting the 2200 subjects included their impact on Australia and Australian life. It was this broad definition which justified the inclusion of people such as British soldier William Birdwood, despite the fact that he only ever spent six weeks or so in Australia. As first commander of the ANZAC corps at Gallipoli, however, he had an enormous impact on the lives and cultural identity of generations of Australians.

The dictionary has also modified the 'traditional great men and captains of industry' approach of older biographical dictionaries.

Mr Arnold believes that the book's focus on individuals from all aspects of Australian life rather than on those with social position has made it a "very contemporary book".

"It reflects the nature of life in Australia for all Australians, rather than just the business elite, throughout the 20th century," he said. "A book such as this compiled in the 1960s would have been very different. There would have been very few Aborigines or pop musicians included, but every bishop and justice of the High Court would have been. Ours is a very democratic selection."

The Monash dictionary, he says, includes actors, writers, musicians and social activists – people from walks of life other than the more traditional fields of politics, the law and industry, which typically dominate biographical compendiums.

"Criminals like the famous prison breaker Darcy Dugan, and Ronald Ryan, the last prisoner executed in Australia, are included in our work, not because of their 'achievement' but for their notoriety," he added.

It is also a book which explains a great deal about the nature of Australian society in the 20th century, he says: "If a person who knows nothing of Australia were to read it closely, they would see that Australia was a stable democracy and a society which recognised minority groups and valued sporting prowess and achievements."

He said the criteria used by the editorial team made the Monash dictionary very different from the more traditional tomes such as the *Australian Dictionary of Biography (ADB)* and *Who's Who,* which included entries based on information supplied by the subjects themselves rather than "critical judgements".

Mr Arnold also pointed out the slow rate of publication of the scholarly *ADB* and its policy of only including the dead: "What this means is that living figures like Sir Donald Bradman, whose cricketing achievements are already 50 or 60 years old, would probably not be included until the next round, sometime early next century."

In contrast, the Monash dictionary was being amended as late as September to include events such as Andrew Peacock's resignation from parliament.

But is it complete? John Arnold thinks so. "With coverage of the careers of 2200 people over 592 pages, it is comprehensive but still a practical size," he said.

"If you sat down with a pile of specialist reference books for a week, you would probably come up with another 50 people who could have gone in and 50 who could have come out, but these would be borderline cases. We have not missed any major figures."

And yes, Sir John Monash gets one of the longest citations in the book.

BY STEPHEN MATCHETT

The *Monash Biographical Dictionary of 20th Century Australia,* $85 rrp.

Cairo contraception and culture conference

A group of Monash students recently travelled to Cairo to express their point of view at a world conference on global population and development. Juliet Ryan reports.

About 150,000 women terminate unwanted pregnancies each day, with about 500 dying as a result of unsafe abortions.

The recent UN International Conference on Population and Development in Cairo focused on a number of important issues such as population growth rates, the status of women's health and the reproductive health of adolescents.

A group of third-year medical students known as Monash University Medics for Population Awareness (MUMPA) attended the week-long conference along with representatives from more than 170 countries.

MUMPA representative Ms Kathryn O'Conner said the high rate of unwanted pregnancies recorded by the World Health Organisation highlights the importance of women's reproductive health and challenges the view that women have control over their fertility.

MUMPA attended the conference as a non-government organisation, aiming to draw attention to the impact of global overpopulation and attempting to give it a higher profile on the political agenda.

"We felt that as Australian youth, overpopulation and related health issues are our problem and will continue to be our problem in the future."

Environmental consequences are often what first spring to mind when overpopulation is discussed. However, the MUMPA group focused on the need for safe and effective contraception and on education for women and teenagers as a means of combating the increasing population problem.

Of five million teenage abortions performed annually, about one in three is undertaken in unsafe conditions.

One of the group's main aims is to make contraceptives widely available to the 300 million women worldwide who currently have no access to birth control.

The group believes it is vital for women to be able to control their fertility.

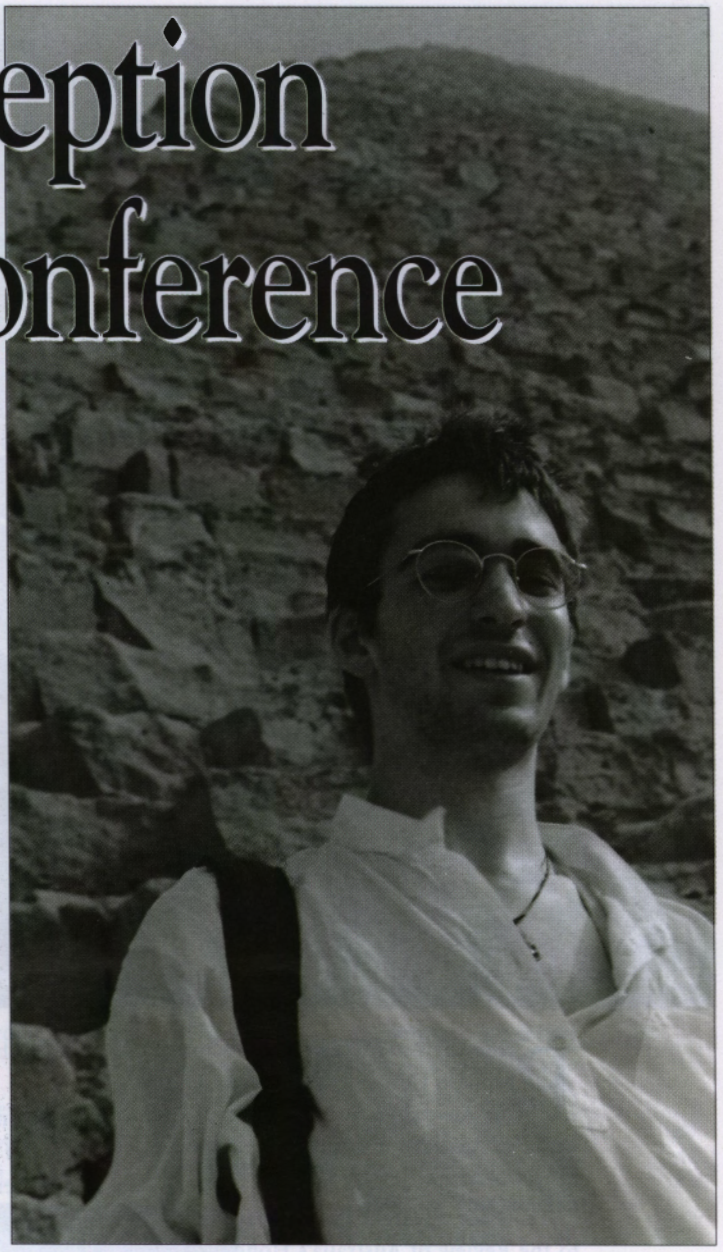
Group member Ms Jane Anderson said: "We are not interested in telling people how many children they should be having, but rather in providing family planning to people who don't have access to it but would like to control their fertility."

Contraception is not the only issue the MUMPA group is concerned with. It believes women should be better educated about reproductive health, allowing them to make more informed decisions.

The group is quick to point out that while overpopulation is most recognisable in developing countries, it is the developed countries which place more strain on the sustainability of the environment.

Statistics show that the wealthiest 20 per cent of the world's population uses 75 per cent of the world's resources.

Ms Anderson believes that if Australia wants to maintain its sustainability it needs to focus on developing a population policy.

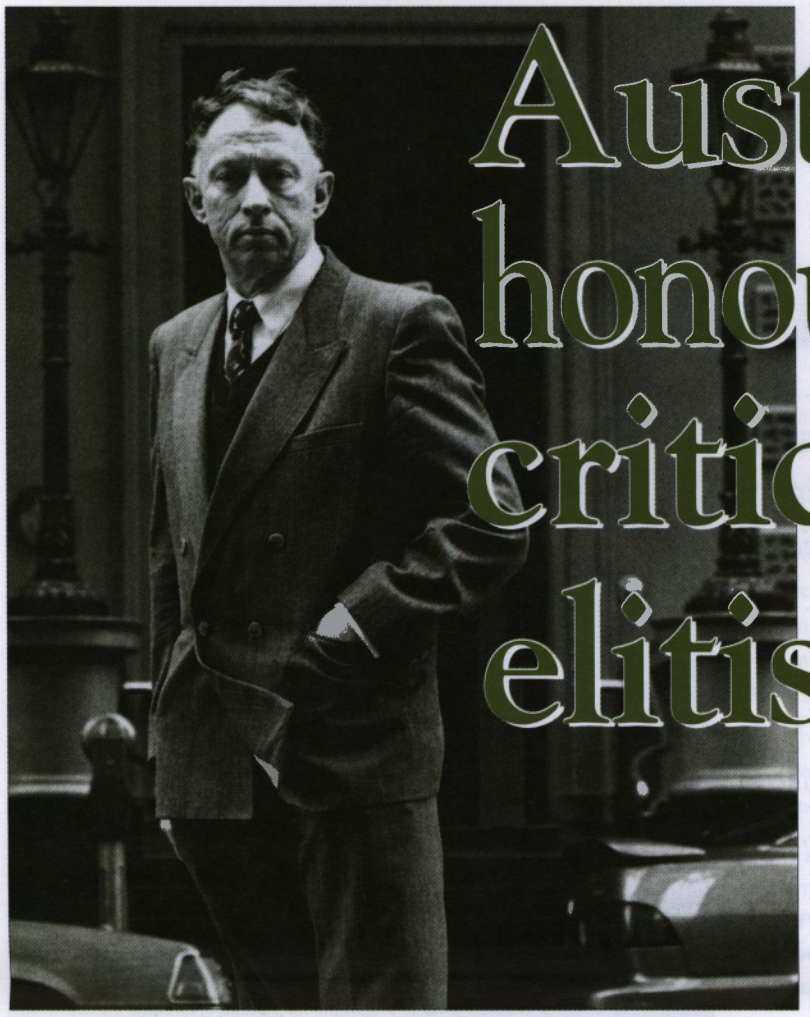


Mr Daniel Stepanski, one of the Monash students to attend the UN conference in Cairo, at the Great Pyramid.

"With only about 10 per cent of Australia's land being arable, we should be thinking about our population capacity and the number of people that can be sustained here," she said.

The Cairo conference reflected the views and opinions of a number of culturally diverse backgrounds and religions. While MUMPA stressed contraceptives and education, other groups were interested in issues such as celibacy.

The group believes that a conference of this kind is extremely important. It hopes that by drawing attention to the problem of overpopulation, it can influence government bodies to come up with possible solutions.



Australia's honours awards criticised for elitism

Professor Peter Spearritt, director of Monash University's National Centre for Australian Studies, believes the Order of Australia honours systems should be restructured.

Professor Spearritt has been appointed to the Review of Australia's Honours and Awards Committee, which was established following recent criticisms that the existing system is elitist, sexist and racist.

According to Professor Spearritt, the four-tiered system should be abolished and a single level of recognition introduced in its place, creating easier access for groups such as migrants and women.

"In a hierarchical system, the people who get the top awards tend to be leading business people, usually men, leading medicos, high court judges, senior academics and heads of government departments.

"These people have already had quite a few rewards heaped on them by society. I can't quite see the rationale of giving them yet another award, unless a lot of what they have done is outside their normal paid employment," he said.

The committee, which was initiated by the Federal Minister for Administrative Services, Mr Frank Walker, will coordinate a large-scale public consultation process to determine the future direction of the honours system.

Chaired by Ms Clare Petre, a senior officer in the NSW Community Services Commission, the committee will examine the system's relevance to Australian society and whether it meets current community ideals of access, social justice and equality.

Professor Spearritt hopes that the review process will raise public awareness of the honours system and bring about a more representative distribution of awards.

He believes few people realise that any Australian can recommend a fellow citizen for an honour award: "Our market research shows that large groups of the community have no notion at all about how you would go about nominating someone for the award."

Professor Spearritt said that traditionally, certain business and professional groups had been able to monopolise the honours system through expert organisational skills and an understanding of what was required.

The Order of Australia was established in 1975 as an exclusively Australian decoration for achievement and service, and consists of four levels of award: Companion (AC), Officer (AO), Member (AM) and Medal (OAM). Prior to 1975, the British system of honours was used exclusively.

Professor Spearritt's appointment to the review committee follows his recent study which compared the social and economic backgrounds of the Knights and Dames in Australia prior to 1975 with those awarded the Order of Australia more recently.

The comparison found striking similarities in the backgrounds, educations and professions of those decorated under the old imperial honours system and later Order of Australia recipients.

"It seems ironic that a Labor Government in 1975 introduced an apparently indigenous Order of Australia only to replicate, more than anyone had first imagined, the old imperial system," he said.

The National Centre for Australian Studies will also contribute to the review committee with an analysis of the class backgrounds and employment records of all people awarded ACs and AOs.

Postcode analysis of where each recipient lived at the time they received their award has already indicated a concentration of decorations in a small number of suburbs in Melbourne, Sydney and Canberra.

Professor Spearritt hopes that the current review process will bring about greater change and a higher level of equality and access than the 1975 Labor Government-sponsored overhaul.

BY JAMIE SILVER

Any individuals or organisations interested in contributing to the review process can forward written submissions, by 23 December 1994, to: The Secretary, Review of Australian Honours and Awards, GPO Box 127, Canberra, ACT 2601.

Exhibition provides bare bones for joint research

Dr Pat Vickers-Rich, one of Monash University's resident palaeontologists, received a rather unusual gift during a recent trip to Russia – a primitive reptile fossil dating back to a time before dinosaurs existed.

The skull of the 240 million-year-old Pareiasaur was given to Dr Vickers-Rich as a birthday gift, and is the first fossil of its kind in Australia.

Dr Vickers-Rich explained that the fossil was from a primitive reptile belonging to a species at the base of the reptilian family tree and was related to the ancestors of other reptile species.

She recently spent a month in Russia with the travelling 'Great Russian Dinosaur Exhibition', which she has worked on intensively since she first saw it in Tokyo in 1992.

Dr Vickers-Rich was so impressed with the exhibition that she organised for the collection to travel to Australia.

The exhibition – the largest collection of fossils ever to travel to Australia – was launched in Melbourne in August last year.

It shows the remains of dinosaurs and other prehistoric reptiles – some more than 200 million years old – gathered from sites across Russia and Mongolia.

The three cooperating bodies involved in the exhibition are the Monash Science Centre, of which Dr Vickers-Rich is director, the Palaeontological Institute of the Russian Academy of Sciences in Moscow, and the Queen Victoria Museum in Launceston.

The Monash Science Centre and the Palaeontological Institute in Russia plan to strengthen their ties by becoming sister museums with joint research and exchange programs and an extensive casting project that will feed funds back into science, and help in training technical staff and in co-operative research.

The casting project will involve making casts of fossil specimens found in the former USSR, Mongolia and Australia, and selling them to other museums around the world to generate further income for continuing research.

The success of the exhibition has been overwhelming. Already further research has taken place and about 40 scientists and technicians from Russia have travelled to Australia to take part in the exhibition – all funded by proceeds from the exhibition or its sponsors. A further 15 Russians are expected in Australia before the end of 1995.

"The joint venture is unique," Dr Vickers-Rich explained. "We have been able to channel enough money back into Russia from the exhibition to pay salaries at the Palaeontological Institute as well as provide an income for the Monash Science Centre and the Queen Victoria Museum.

"We are negotiating with institutions in the US and Europe to take the exhibition overseas. It is critical for the survival of the institute in Moscow that the exhibition continues, especially in such unpredictable times."

The exhibition has had generous support from several corporate sponsors including Qantas, which has flown the fossils all around the world, Channel 7, ICI Australia, FAI Insurance, Australia Post and Bostik.

The exhibition is currently in Brisbane, and will open in Perth in early 1995.

By Juliet Ryan

Dr Pat Vickers-Rich with a replica of an early dinosaur, Proceratops.

Seeing the light v

Optical fibre technology developed enhance security systems in c

Imagine a security sensor clever enough to distinguish whether a window pane has been broken by a brick or a bird's beak.

Or a sensor which not only indicates when the material in an aircraft wing has hardened to its maximum strength during fabrication but also warns if the wing is likely to fail while in service.

These 'smart' sensors are possible with the use of optical fibre technology and are examples of the kinds of detectors being developed by the Centre for Advanced Materials Technology on Monash University's Clayton campus.

The centre, a national key centre for teaching and research, has poured about $600,000 into developing expertise and practical experience in the area. It has already contributed its know-how to a fibre optic security system in an Australian gaol.

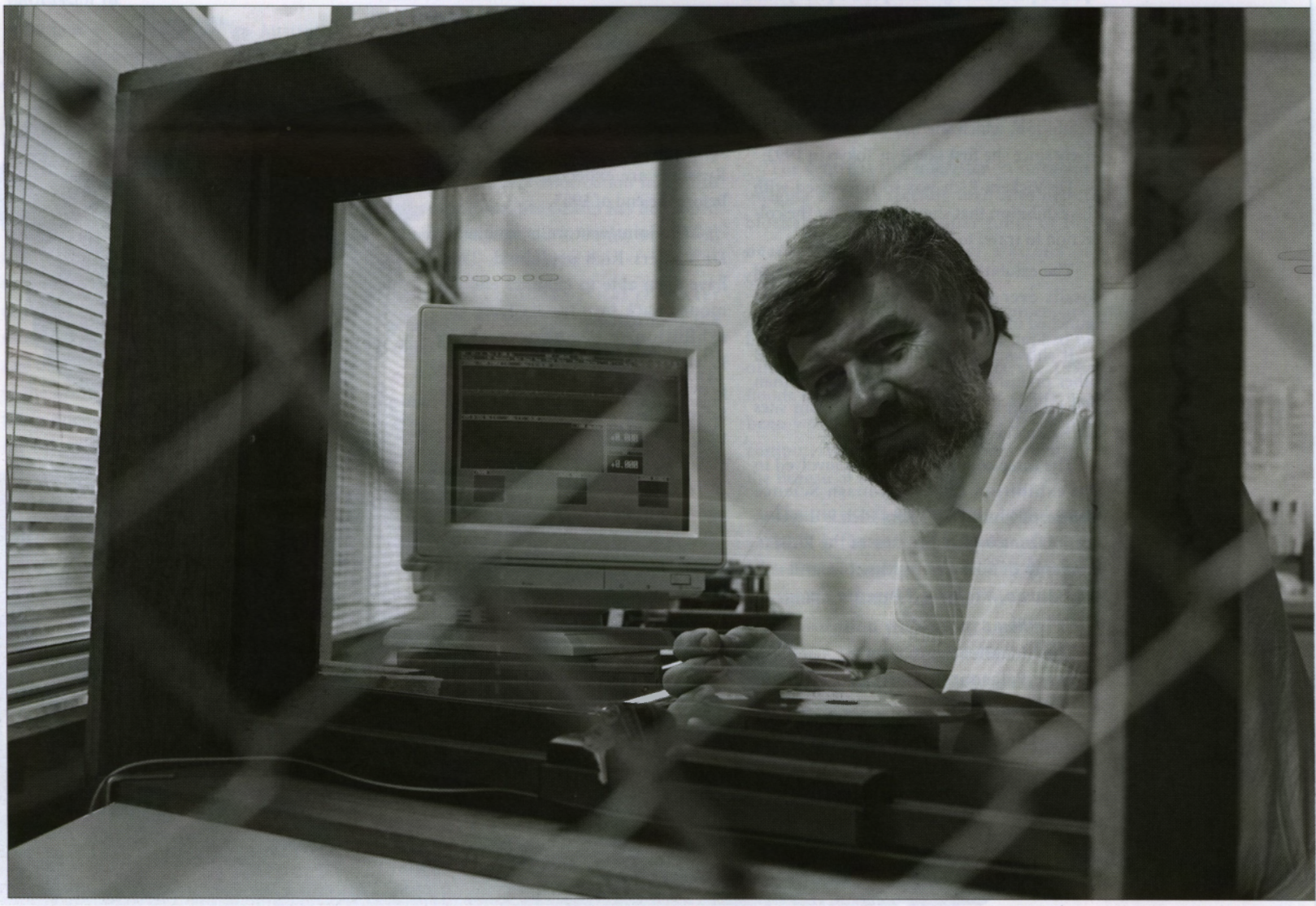
Optical fibres can sense changes in chemistry and in physical properties such as strain, temperature, pressure and magnetic field, says Mr David Fotheringham, the centre's business manager. And because they operate with light rather than electricity, they are resistant to electrical interference and are safe to use in explosive or hazardous environments such as electricity substations.

Fibre optic detectors can also be built to different degrees of 'smartness' or ability to distinguish between closely-related events, such as the bird and the brick, thereby reducing the number of false alarms.

The capacity of optical fibres to act as sensors is bound up in the way they work. At the boundary between two different materials, light bends. This is why when you sit on the edge of the bath and look at your feet underwater, they seem distorted. Sometimes light bends so far at the boundary between two different materials that it is reflected back into the material in which it has been travelling – the boundary acts as a mirror.

Optical fibres are made of two different materials – an inner glass core and glass cladding surrounding it. Light is trapped inside the inner glass core and reflected back at the boundary where the glass core and cladding meet – it's as if the light were travelling down a pipe with a mirror on its inner surface.

The different properties of optical fibres mean that this system can act as a sensor in two



Professor Paul Rossiter analyses signals from 'smart' sensors embedded in a window frame and wire fence.

vith optical fibres

at Monash University is helping
rs, homes and even prisons.

separate ways. First, there are a limited number of paths a beam of light can take down the optical fibre pipeline. The light can travel straight down the middle, or it can bounce off the glass core–glass cladding boundary in a number of set patterns, which are referred to as nodes.

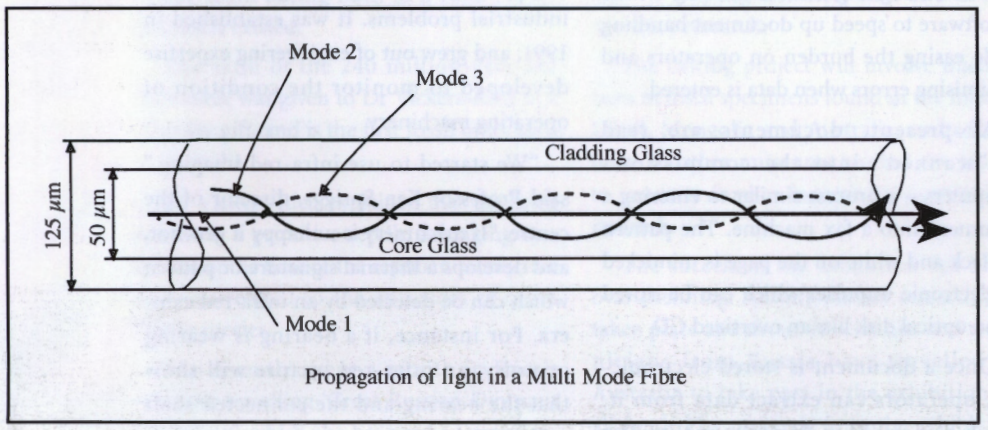
The number of paths the light takes and the amount of light going down each path is determined by changes in external physical properties such as temperature and pressure. Therefore, if it is possible to monitor how the light travels in the fibre, it is then possible to sense changes in temperature and pressure.

Second, some of the light travelling down the fibre escapes from the glass core into the glass cladding before it is turned back. Monitoring chemistry relies on this property of optical fibres. If the glass cladding is sufficiently thin, then it is possible for light to travel through whichever material is surrounding the cladding before heading back into the core.

Determining the components of light absorbed by the surrounding material can give an indication as to what is in that surrounding material. A length of optical fibre can be used with thin cladding to detect or sense certain chemicals within the surrounding material.

Researchers at the centre became interested in the optical sensors while working on a project to develop novel fluoride-based glasses from which to fabricate optical fibres. Different glasses are useful for carrying light of different energy levels, and fluoride glasses are particularly good for transmitting light in the infra-red part of the spectrum.

Infra-red light also tends to be good for detecting specific molecules, because it is readily absorbed by particular chemical bonds. Under the leadership of Professor Paul Rossiter in the Department of Materials Engineering, a group from the centre began to investigate the potential of fluoride glass optical fibres as chemical sensors.



Propagation of light in a Multi Mode Fibre

Within three years the group has developed an effective method for sensing activity external to the fibre. This has been achieved using cost-effective laser diodes to inject light of appropriate wavelengths. And the group has also come up with an efficient method of detecting and analysing the changes in that light to give information about movement, temperature or chemistry.

At present, the team is working with Monash biotechnologists to develop sensors that can detect specific proteins.

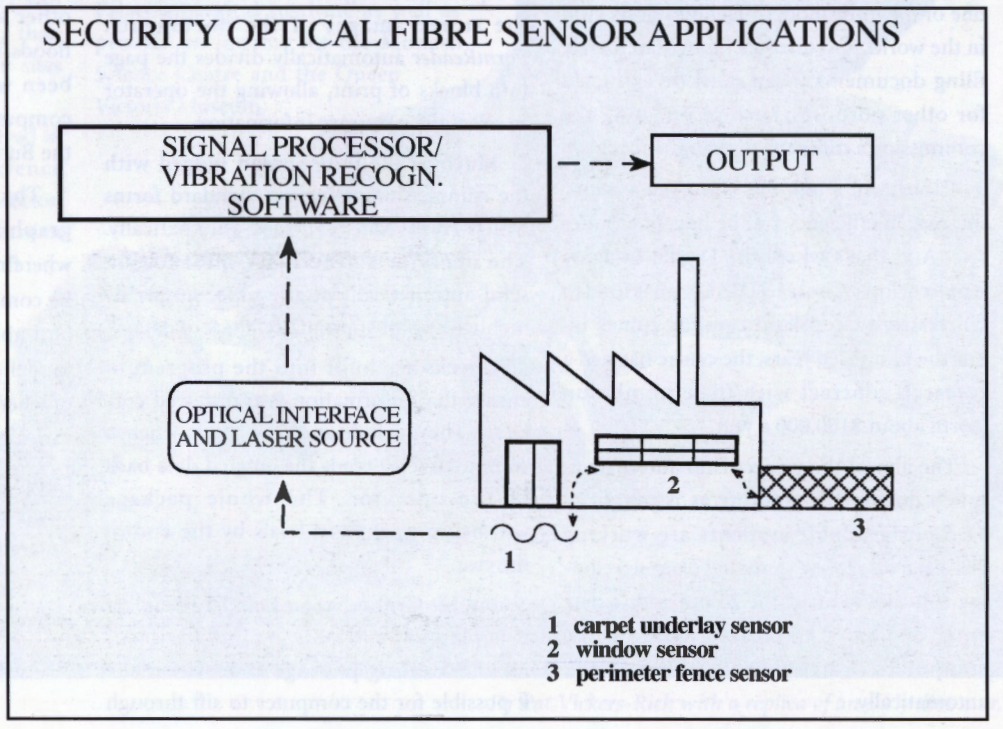
The centre wants to put its expertise to practical use by developing products for industry and is seeking commercial partners. To this end, it has set up a special area for demonstrating its products.

In one display, a security sensor is hooked up to a cyclone fence, and a series of detectors are positioned under a carpet. Any vibration immediately triggers the sensors, which are hooked up to signal-processing software.

The signal comes out as a wave on the computer screen, and different events quite clearly trigger characteristic patterns. For instance, the system can easily distinguish between a burglar and a cat walking across a sitting-room rug. Other displays include vibration monitoring in machinery.

Fibre optic detection systems can vary in size from a few centimetres to several kilometres long, and the fibre is a wire that can be hidden anywhere. "With security, the major advantage is that the system is very hard to tamper with," Mr Fotheringham says. "Electrical detectors can be bridged by wire, or the electricity can be shut off. But with optical fibre you would have to interrupt the light path, literally cut the wire, and that is easily detected."

BY TIM THWAITES



The image of efficiency

Technology developed at Monash University is helping the Australian Securities Commission process millions of pages of information about Australian companies each year.

Every working day a mail truck unloads between 4000 and 16,000 documents at the Australian Securities Commission's national information processing centre in Traralgon, about 150 kilometres east of Melbourne.

These documents amount to some seven or eight million pages of information each year on companies operating within Australia.

By law, all information on Australian companies – who owns them, who runs them, what they do and how well they do it – must be filed with the commission. Most of this information must be available for public scrutiny within days, and in some cases, within hours.

In less than four years, the commission has assembled an electronic archive of more than 30 million images that can be retrieved at the touch of a computer key. Storing so much information is a major task, even for one of the most modern facilities of its kind in the world, and involves more than merely filing documents. Data must be extracted for other purposes, such as updating the commission's company directors' index.

Clearly, for a task this size, even a minor increase in efficiency can be hugely productive. And that's where the Digital Imaging Applications Centre (DIAC) on Monash University's Gippsland campus comes in. For the past three years, the centre has had a research contract with the commission worth about $100,000 a year.

The aim of the project is to automate as much document handling as is practical. Two postgraduate students are working full-time on research ranging from developing software to assist the commission's data entry operators, to creating ways for the computers to handle some of the work automatically.

Monash PhD student Mr Brian Griffin has been designing and assembling a suite of software to speed up document handling while easing the burden on operators and minimising errors when data is entered.

At present, documents are read or "scanned" into the commission's computers – a process similar to entering a document into a fax machine. The pattern of black and white on the page is mimicked by electronic impulses which can be stored on an optical disk like an oversized CD.

Once a document is stored electronically, operators can extract data from it, which at present is done manually. The operator brings up the document on the screen and transfers information from it to another database. Mr Griffin has developed a software package, *FormReader*, which will help automate this process.

The package uses optical character recognition technology, which allows the computer to recognise individual letters in the stored images of the documents. *FormReader* automatically divides the page into blocks of print, allowing the operator to select the necessary information.

Much of the information lodged with the commission arrives on standard forms which *FormReader* can read automatically. The operator can transfer information semi-automatically at any time, simply by highlighting an appropriate block of data.

Checks are built into the program to ensure that information is transferred correctly. They include an audio check, where a computer voice reads the entered data back to the operator. The whole package will begin workplace trials by the end of the year.

But Mr Griffin has far grander plans. He is hoping to build software into his document-handling package that will make it possible for the computer to sift through an electronic image of a document for key words – in effect turning documents themselves into databases. For example, if you wanted to determine whether person A and person B had any business links, this software could search for documents in which their names appeared together.

DIAC is a multi-disciplinary research and development centre which uses computer imaging techniques to help solve industrial problems. It was established in 1991, and grew out of engineering expertise developed to monitor the condition of operating machinery.

"We started to use infra-red imaging," said Professor Ken Spriggs, director of the centre. "If machinery is unhappy it gets hot, and develops a thermal signature or pattern which can be detected by an infra-red camera. For instance, if a bearing is wearing or noisy, an infra-red picture will show that the bearing and the connected shaft are hot."

The centre is still interested in infra-red imaging and has recently used it to detect blockages inside the boiler tubes of the nearby brown coal power stations of Generation Victoria.

Once the expertise in image processing had been acquired, it was rapidly applied to other areas. For instance, since the 1990 floods in the Latrobe Valley, the centre has been working on a project to develop a computerised flood prediction system for the Bureau of Meteorology.

The project is also making use of geographic information systems software, whereby land surface and rainfall data can be combined into a model of water run-off and absorption within catchments. This model can then produce predictive images of where floods are most likely to occur.

The centre is also using its imaging expertise to assist in preparing computer-aided learning packages for Open Learning Australia.

"We are not just interested in image processing," Professor Spriggs said. "We are working at applying it in innovative ways."

By Tim Thwaites

Homeless student numbers provoke public outcry

Homelessness among Australian secondary school students is finally being recognised as a major social problem, according to a Monash sociologist.

Dr Chris Chamberlain and his research partner, RMIT lecturer Mr David MacKenzie, raised widespread concern this month when they released the latest figures from a National Census of Homeless School Students undertaken earlier this year.

In a research paper presented at the International Year of the Family Conference in Adelaide in November, the researchers said there were 11,000 'known' homeless students in Australian secondary schools at the time of the census, and an estimated 25,000 to 30,000 students experienced homelessness at some time during the year.

Dr Chamberlain said the census results revealed an alarmingly high number of homeless students across all socio-economic groups and geographical areas.

He said most of these teenagers dropped out of school before completing their education and many ended up living in the streets.

"Up until now, nobody's ever really thought about homelessness as it applies to school students, not even people like David and myself who have been working in this field for a number of years," he said.

The national census (featured in the September 1994 edition of Montage) involved all government and Catholic secondary schools in Australia.

Dr Chamberlain said 99 per cent of the schools filed a census return, and 61 per cent reported having homeless students enrolled at the time of responding.

In a joint statement, the researchers said the issue of 'youth homelessness' had received considerable media coverage since the publication of the 1989 Human Rights and Equal Opportunity Commission report: *Our Homeless Children* (The Burdekin Report).

"However, homeless youth have generally been thought of as 'street kids'," they said. "The fact that many young people become homeless while still at school has been overlooked.

"At present there is no coordinated national policy on how schools should deal with homeless students."

Schools with more than 10 homeless students at a given time (some reported having up to 60) are currently being overwhelmed by the size of the problem, they said.

Even schools with only a few homeless students were not able to provide effective counselling and welfare support.

Monash senior lecturer in sociology Dr Chris Chamberlain – calling for action to ease student homelessness.

The pair believe that any prevention and early intervention policy must focus on schools as the primary locations for intervention.

Dr Chamberlain said homeless students were one of the most vulnerable groups in the school population and schools had to be adequately resourced to help them.

"Unless something is done in the schools you are just feeding these kids out into the broader system," he said. "If you want to intervene early and stop them getting into the street culture, the school's the place to do it."

He said the present system also did not allow for any follow up to find out what happens to students who drop out of school because of the pressures of being homeless.

"There are just too many, and when they drop out they join the ranks of the homeless unemployed," Dr Chamberlain said.

The study found that only a quarter of the 11,000 teenagers recorded as homeless at the time of the census came from a 'conventional' mother/father family. A vast majority were from homes with only one parent, a step-parent, or a de facto partner.

About half the students leave home to stay with friends or relatives. But when this temporary arrangement wears thin, they end up moving from one place to another until their lives become so unstable they eventually drop out of school.

The national census was a project of the Australian Housing and Urban Research Institute (AHURI) and was funded by Health and Community Services Victoria, the Commonwealth Department of Housing and AHURI.

BY SUE HOBBS

A practical course in learning the law

You have just emigrated to Mongolia and are welcomed in Ulan Bator with a party thrown by relatives. The festivities are in full swing and a dart game, held in your honour, is underway. Suddenly police raid the party and arrest you, along with everyone else. A charge is laid and you are fined the equivalent of $A750. The offence: being present at a dart game – legal in Australia, but not in Mongolia.

This fictional scenario – a reality in Australia if you substitute Vietnamese people involved in cockfighting for Australians playing darts in Mongolia – is not uncommon at the Springvale Legal Service (SLS).

The SLS, situated just six kilometres from Monash's Clayton campus, is celebrating 21 years of representation for those who find the Australian legal system bewildering.

According to SLS coordinator Mr Adrian Evans, the service not only gives legal support to new Australians but increasingly is advising those who are unable to pay for private representation.

"Unfortunately, it is not only new arrivals who cop it," Mr Evans said.

He gives examples of ethnic males who, 'disenfranchised' by a lack of education, 'gather' car stereos as a means of support.

SLS acts both as a service and an education facility. Under qualified supervision, paid for by the university's law school and government funding, Monash students advise clients in many areas of criminal law, as well as in torts, contract and family law.

From its humble beginnings in 1973 as a student-initiated project, the service took just five years to grow into the first clinical legal education program of its kind in Australia.

"A great number of Monash law students have been involved in this legal maelstrom since its earliest days, 21 years ago," Mr Evans said.

"Students such as Neil Rees, now dean of Law at Newcastle University, and Don Flemming, now at the University of Canberra, believed they had an obligation to people in crisis.

"First at Russell Street Citizens' Advice Bureau and then at 5 Osborne Avenue in Springvale, students and the odd lecturer began to listen, learn and argue.

"Soon augmented by solicitors – who actually possessed practising certificates – they made a difference to the workers and the kids of a fast-growing industrial area."

SLS now sees about 4000 clients each year, giving it the highest caseload of any community legal centre in Victoria.

It also operates 'pro-active' programs, staffed by Monash students who have been there since SLS's inception.

Mr Evans explained that the programs were trying to bring together residents and client groups – groups or individuals who believe they have been victims at some stage, of police, lawyers, industrial polluters or wife-beaters.

Springvale Legal Service has now published the story of its 21-year history. *It Seemed Like a Good Idea at the Time* (rrp $15) is written by Kerry Greenwood and is available from Ms Judy Taylor at SLS on (03) 562 3144.

BY JULIET RYAN

Erindale – Home of Springvale Legal Service until 1987.

By reason of insanity

After the birth of her son, 'Jane' suffered from severe depression and blackouts. She began to hear voices telling her that her baby was in pain and that she had to put him out of his misery. Jane killed her child by driving over him in her station wagon.

'John' was hit on the head during a fight with a friend. A short time later, while suffering from concussion, John drove his car at his friend, who suffered severe injuries as a result.

These two cases are based on actual criminal trials in which both 'John' and 'Jane' were not considered legally responsible for their actions and were found not guilty.

Monash law lecturer Ms Bernadette McSherry, the 1995 recipient of the Newman College Archbishop Mannix Travelling Scholarship, will explore the reasons why people in such circumstances are not considered responsible for their crimes.

She will be using her scholarship to complete her doctoral thesis on 'Mental illness and criminal responsibility', at Osgoode Hall Law School, York University, in Canada next year.

Ms McSherry's thesis will explore the interdisciplinary problems of law and psychiatry, evident in mental-state defences such as insanity and automatism (the name given to acts carried out while sleepwalking, during concussion, after consuming drugs or alcohol, or in a state of 'dissociation').

Ms McSherry believes that current Australian legal tests used to distinguish between mental conditions in people accused of crime are unsatisfactory and may lead to arbitrary results.

She is concerned that Australian courts have allowed the possible repercussions of acquitting a person who may be dangerous to influence their decisions about who should or should not be absolved from criminal responsibility.

"It's a very difficult area of the law but one which is of vital importance because of the consequences which may follow from how a mental condition is categorised," she said.

"If an accused person's mental condition is viewed as a 'disease of the mind' it may lead to a verdict of not guilty on the grounds of insanity. That person is then detained 'at the Governor's pleasure'.

"However, if the condition is seen as resulting from some extraordinary external form of stress, it may lead to a complete acquittal."

Ms McSherry said the Mannix scholarship would give her an opportunity to examine the Canadian approach to mental illness and criminal responsibility.

"Research into the links between psychiatry, psychology and law is well established in North America and is of growing importance in Australia."

The Mannix scholarship is awarded to a person considered by the selection committee "to possess the qualities of character and general ability which would justify their hope of becoming a competent member of the teaching staff of a tertiary institution and a well-reputed Catholic in that office".

BY GEORGIE ALLEN

Lifting the shroud on divorce

When Monash law graduate Eileen Stuart set out to write her book, she must at times have despaired.

For after choosing to unravel the astonishingly complicated subject of marriage annulment in the Catholic Church, she would soon have learned what many before her had already discovered: that annulment can be, and usually is, a legal maze.

"If it is true," Mrs Stuart writes, "that only in illness does the body reveal its complexity, then the Church's laws, which govern the dissolution and annulment of marriage, testify to the pathological state of the system."

In *Dissolution and Annulment of Marriage by the Catholic Church* (Federation Press, rrp $35), Mrs Stuart gives a detailed history of marriage in the Catholic Church, the constitution and authority of the Church, and dissolution and annulment.

To non-Catholics, some of this information is a little like Sunday Mass; if you have not been raised in the Church of Rome, you may have trouble following proceedings.

Although Catholics divorce at about the same rate as others in the community, they are unable to remarry in the Church without an annulment.

The Church has to agree that there are sufficient grounds for a marriage to be considered invalid. Such grounds may include psychological incapacity like immaturity, or an inability to assume the obligations of marriage on either physical or mental grounds.

A submission, virtually amounting to a life history, and an interview before the Melbourne Marriage Tribunal begin the process.

But without proper direction, many committed Catholics are unable to present their cases accurately and comprehensively. And once advised that there are no suitable grounds for a case to proceed, those seeking an annulment have no recourse.

Mrs Stuart's scholarship is to be admired – untangling the disparate strands of the blanket which conceal the annulment procedure would not have been an easy task, one made even more difficult when you consider that most of her research material came from the US. (It seems researchers, like divorcing Catholics, are short of local information.)

Mrs Stuart was astonished by the scarcity of pertinent information available to Catholics when she attended a Sunday night meeting six years ago.

It had been announced that Reverend John Hannon, associate judicial vicar of the Melbourne Tribunal, would address a meeting about marriage tribunals and annulments.

"On the night, so many people turned up that the meeting had to be relocated to a much larger venue. After the address, the speaker offered to answer written questions and did so until it became so late that he had to abandon the effort," Mrs Stuart said.

To overcome such problems, Mrs Stuart suggests that family law lawyers should be qualified to advise clients on annulment: "The advantages for their divorce clients would be that existing knowledge of their marital problems would avoid the expense of giving new instructions; confidentiality would be preserved; and, finally, the mystery which surrounds the tribunal process would be dispelled."

Mrs Stuart believes that community-based education programs and other voluntary information and support programs would also help to overcome the difficulty. She neglects to mention, however, that her own book should be compulsory reading for any committed Catholics wanting to end a marriage.

Her achievement is remarkable; she has written what virtually amounts to a manual for anyone seeking an annulment. In fact the book could be subtitled 'Everything you wanted to know about annulment but were too confused to ask'.

BY JOHN CLARK

ARTS GALLERY

■ Monash Gallery

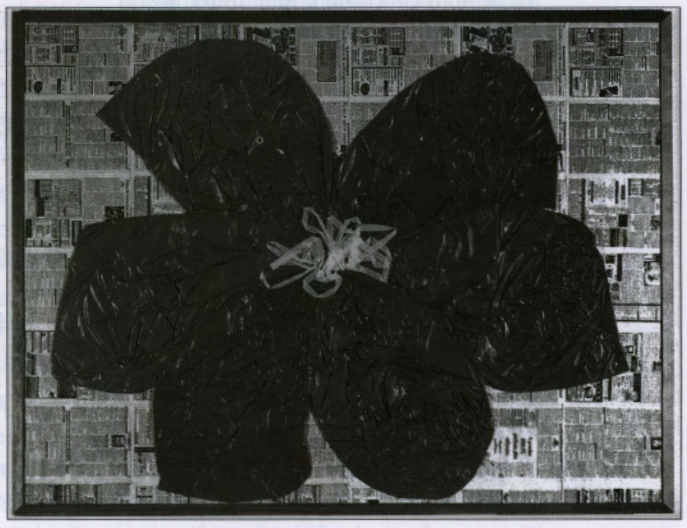
Tableaux

Tableaux is a selection of works from the Monash University collection which grouped to examine subject matter and themes in contemporary Australian art and identify relationships between works by different artists.

Geometric abstraction, suburbia, flora and the sublime are concepts or images common to groups of works on show and can be explored for their historical associations and contemporary relevance.

Artists in the collection include Peter Booth, Dale Hickey, Tim Johnson, Constanze Zikos, Howard Arkley, Ian Burn, Bill Henson, Robert Rooney, Maria Kozic, Tim Maguire, Margaret Preston, Gary Wilson, Charles Blackman, Philip Hunter and Bernard Sachs.

The exhibition will run until 17 December.



Gary Wilson's 'Flower Construction No. 1 (1992)'.

Japanese sensitivity and Australian natives create ceramic beauty

Kazu Maeda is a man who conveys a sense of peace and tranquillity in his person as well as his art.

One of Japan's foremost artists and ceramists, Mr Maeda has a gentle nature that transfers easily into his paintings.

Mr Maeda creates his ceramic paintings by pressing plants and flowers into soft clay to leave a pattern. He then fires the clay, paints the impressions and fires the clay again.

As artist-in-residence at Monash University's School of Art on the Peninsula campus, Mr Maeda is preparing an exhibition for the Mornington Peninsula Arts Centre.

He is using only Australian native plants and in particular those found on the Mornington Peninsula.

He said he stumbled on the idea of using impressions from plants when he was amusing himself one day with the designs the leaves left behind in the clay: "I suddenly became captivated by the shape of each leaf and the pattern of its veins."

As a Buddhist, Mr Maeda believes deeply in the 'wholeness' and 'completeness' of nature, and says that the flowers of a plant should not be portrayed without the roots.

"The roots of a plant are the same as the mouth of an animal, its leaves, the hands and feet, its stem a torso, and its flowers its reproductive organs.

"I feel an obligation to express every part of the creature from the hair-fine roots to the veins at the tips of the leaves. The goal of my work is to create art that conveys this awareness of the Buddha's existence in all things."

Mr Maeda is best known for his ceramic walls, which feature in restaurants, schools, hospitals, and hotel and business foyers throughout Japan, the US and Spain.

Mr Paul Davis, coordinator of ceramic studies at Peninsula's School of Art, believes it is important to develop the school's links with Japan and Japanese ceramists because of that country's rich tradition and experience in ceramics.

He is learning Japanese to communicate better with Mr Maeda and other ceramists who he hopes will visit Monash from Japan in the future.

Two of last year's Monash arts students are undertaking apprenticeships with ceramists in Japan.

Mr Davis is also planning to travel to Japan next year to work with a master of ceramics in Hagi.

It is the first time, since the studio of Saka Sensai was established in the 15th century, that a ceramist from outside Japan has been invited to work with the master Sakakoraizaemon.

Not quite realising the significance of the invitation, Mr Davis declined at first, saying he was unable to take time away from work. However, he quickly changed his mind after the Japanese embassy informed him it would be a great insult to refuse such an honour.

Mr Davis will be studying the Japanese tea ceremony and will be required to study Japanese poetry and music to develop a spiritual understanding of the ceremony.

Mr Maeda will return to Japan in December but will be in Australia in January for his exhibition, to be opened by the Japanese Consul General, Mr Koichi Obata. Mr Maeda also plans to fire pots in a kiln recently built by ceramic students at the Peninsula campus.

BY GEORGIE ALLEN

Japanese ceramist and artist-in-residence at Peninsula School of Art, Mr Kazu Maeda.

NASA astronaut has the world at her feet

Juliet Ryan reports on the unusual occupation of one of Monash University's most interesting international visitors.

After 15 years in the same job most people tend to become bored. However, when your job involves shooting off into outer space every now and then, job satisfaction is almost guaranteed.

Dr Rhea Seddon is a NASA astronaut. She is also a medical doctor, surgeon and mother of two children.

On a recent visit to Monash's Faculty of Engineering, Dr Seddon spoke about her life and the immense satisfaction she gains from her work.

Dr Seddon has orbited the earth 780 times on three separate space missions. Her first flight was in 1985 as mission specialist on the fourth flight of the space shuttle Discovery. In 1991 Dr Seddon was aboard the first Spacelab Life Sciences mission, and this time last year she was again in space, for the second Spacelab Life Sciences mission.

Dr Seddon explained that there was a lot more to being an astronaut than travelling through space.

She and her colleagues conduct research into issues such as the way the human body and other living organisms react to weightlessness.

"The crew performs experiments on themselves while in space," she explained.

"We conduct a number of experiments on the cardiovascular and cardiopulmonary systems, the body's metabolism rates and the bones to see how they cope without gravity.

"When the sun rises and sets every 45 minutes, your biological clock tends to get a bit out of kilter."

The experiments conducted in the Spacelab will not only help with studies into diseases on earth but also answer some questions that will assist in NASA's proposed mission to Mars.

"Calcium loss in bones occurs at an accelerated rate in space. Because it takes a year to get to Mars and another year to return to Earth, the astronauts' bones could suffer devastating effects," she said.

Dr Seddon said that some of the engineering feats required of space travel were remarkable.

"Consider not only the engineering expertise that goes into actually getting into space but the engineering expertise that goes into conducting experiments once in space," she said.

"There are lots of pieces of machinery that don't work very well in the absence of gravity. There are vastly different requirements for equipment in space.

"Making sure equipment is perfectly safe and that there is no interference with other equipment, such as electromagnetic interference, that the machinery doesn't create sparks, and that it can be safely shaken up a bit during the launch are all challenges that NASA engineers face when sending equipment into space."

Dr Seddon travelled to Australia for two weeks to work as scientist-in-residence at St Catherine's School in Melbourne.

When should a doctor tell

From Montage 20

Since HIV and AIDS came to attention in the early 1980s, it has been the subject of unmatched public discussion, media attention and widespread concern. This has often been grounded in ignorance and bordering on hysteria. Despite intense publicity of the fact that HIV can only be transmitted via specific bodily fluids, a small public perception remains that HIV-positive people remain unsafe even to be near.

These were the complaints that Michael raised almost every consultation. He desperately wished to keep his HIV status private to avoid the inevitable discrimination and vilification that he feared. What I quickly came to suspect, however, was that Michael's greatest fear was that HIV would end his life as a surgeon long before he was willing to relinquish his beloved career. He adamantly refused to discuss this issue and it began to perplex me deeply.

For a surgeon to transmit the HIV virus to a patient on the operating table would require a mixing of the doctor's blood with the patient's. In the rare event that an injury to the surgeon's hand caused him to bleed into the body of a patient, there is a possibility, but no certainty, that the patient could become infected. It's all a matter of chance. Odds, I have learnt, are peculiar things. Patients will always ask "... doctor, what is the chance I'll recover? ... what are the odds of complications? ...". So often such questions are impossible to answer. When a patient asks about the possibility of a rare complication occurring, doctors are obliged ethically and legally to answer with the truth. More often than not, all that can be said is "... it's most unlikely, but it is possible". It was this that troubled me so deeply. There was a chance, albeit minuscule, that Michael could transmit a deadly virus to his patients. They were coming to him in good faith to be treated for their ailments and when they submitted themselves to surgery at his hands it was, in part, an expression of the limitless trust they had in him. I decided to test the strength of my relationship with Michael Pellini and I pressed him, almost forced him, to discuss the ethical ramifications of what he was doing.

Sitting in the two comfortable armchairs I kept in my consulting room for just these "chats", I put my concerns to Michael. I told him that I believed keeping his HIV status secret from his patients was irresponsible and dishonest. I reminded him of the catchphrase drilled into us by our favourite professor back at university: "*Primum non nocere* (First, do no harm)". Feeling the tension mount, I explained that I thought he owed his patients the right to decide for themselves whether they wished to be operated on by a man with a serious communicable disease. I turned my back on him and stared out at the miserable winter scene outside my window, where the last of the fallen leaves were being blown off by a freezing wind. I begged him to place himself in his patients' shoes, "wouldn't you want to know?" I probed. I waited an awkward minute for a response but when I turned around the door was ajar and Michael was gone.

Now the nature of my ethical dilemma changed dramatically. The decision should have been Michael's alone and yet, when the wellbeing of others was involved, could I in good conscience maintain my silence while he persistently acted in a way I now strongly believed to be wrong? Confidentiality was my pet ethical concern. As early as my student days, I had written impassioned essays fervently defending a doctor's right to maintain confidentiality. I had spoken to assemblies of both the medical and legal professions against legislative changes to increase the powers of a court to demand a doctor reveal information revealed to him in confidence. Indeed I had such a reputation as a defender of doctor–patient confidentiality that many colleagues called my surgery "The Confessional". My objection to Michael's decision not to tell his patients was still very much alive but I knew that to expose him would be practically hypocritical. After all, I was accusing him of abusing the trust of his patients, and yet had he not come to me out of that same trust, a confidence that all he told me would remain secret?

Though I kept his regular appointment free, Michael didn't return for more than two months. I assumed he had found another GP but I had underestimated Michael Pellini and I should have known better.

I remember the day so clearly. It was my first free Saturday for months and I had slept well into the afternoon. I was still half-asleep as I browsed leisurely through the plump Saturday newspaper. I try to avoid medical articles on the weekend if at all possible, but the headline "Prominent surgeon admits he has AIDS" almost leapt at me off the page. I jumped to a false conclusion and cursed the soulless journalist who had so invaded a man's privacy. Rationality, thankfully, took over and I decided at least to read the article before writing the most vicious letter to the editor in history.

All the admiration I had once felt for my friend and colleague came racing back in waves as I read the opening paragraph. "Prominent local surgeon, Mr Michael Pellini, has candidly admitted in a press statement that he has the HIV virus and has begun to suffer Aids-related illnesses ..." The article proceeded to outline Michael's reasons for making this declaration and closed with a quote that was vintage Pellini, "... I hope that by bringing my health out into the open, I have given my patients an informed choice about remaining in my care. If they, and other prospective patients, are to be honest with me, then I too must be forthright. Furthermore, I have decided to offer myself as a specialist in HIV medicine. I hope to build up a practice of people suffering from HIV-related illness and to share with them my successful formula for living with this disease". I threw back my head and laughed heartily. "Brilliant!" I shouted to myself, "... brilliant as ever!"

The last time I saw him, almost a month before he died, Michael was still working every day. I visited his rooms to check on the progress of a young HIV-positive man whom I'd recently referred to him. The waiting room was full to overflowing. In fact, three young men sat outside on the path, raising cigarettes to their lips with bony, wasted hands. Here, though brutally ill himself, Michael was pouring out his famous compassion and flawless medical care to this tragically ill group of men and women. Despite losing his own fight, he was inspiring these people with his confidence, his empathy and the extraordinary qualities of his tender touch. Now that he is gone, you will read many tributes in the popular press about this remarkable doctor. Those of us who have always known him aren't really surprised by his admirable decision or his selfless last months. However wicked his dilemmas, he let the wellbeing of his patients guide his decisions. He couldn't surprise us, we always knew he was brilliant.

When should a doctor tell

Fourth-year Monash medical student Patrick Maloney won the Doquile Perrett Limon Medical Ethics Essay Award for 1994 for the essay printed below. It is the second time a Monash student has won this prestigious award, established to promote debate on ethical issues among Victoria's future doctors. Mr Maloney is one of a growing number of rural students entering the Monash medicine course.

Michael Pellini was brilliant. In each of the six years of our medical degree he placed first in our class of more than 150. A remarkably gifted student, he was the first in our university's history to score perfect marks in every semester of anatomy.

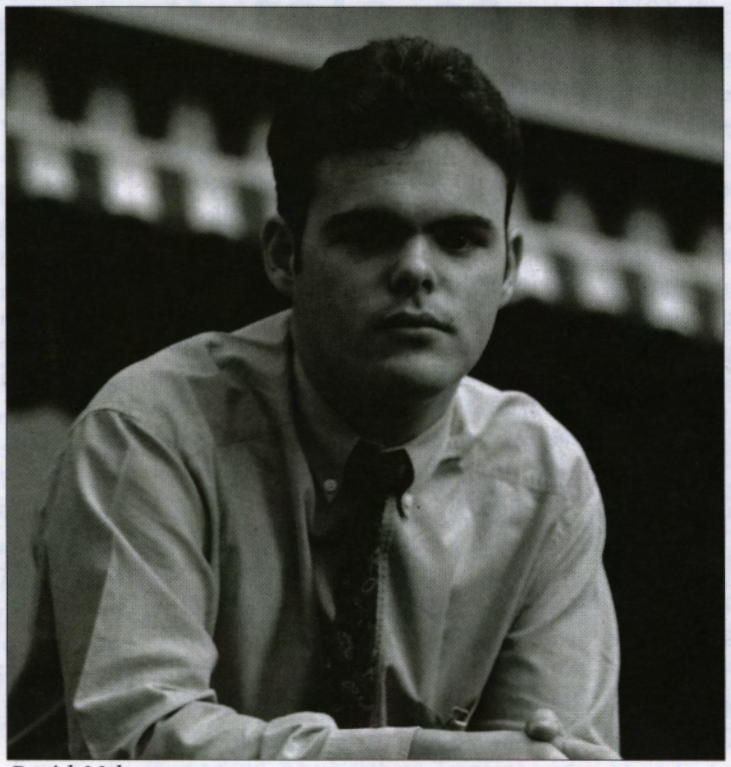
To give you some idea of the man we knew, I remember clearly the day a hapless examiner once corrected him on an answer given in an oral exam. Michael politely objected, insisting his answer was correct. An authoritative textbook was promptly consulted and the examiner curtly apologised. Michael simply smiled and awaited the next question; no guile, no gloating, just a serene confidence in his amazing ability.

When Michael graduated, he became an intern at the city's largest surgical hospital. This year was notoriously arduous, but where we became exhausted and disenchanted, Michael thrived on the challenge that every new patient presented. Every day, as he learnt more about practising medicine, he began to appreciate what it was to truly care for his patients. Despite the ridiculously limited time he could spend with each, Michael at least attempted to find and understand the person inside the bodies he was treating. He was rapidly becoming the rarest of things, a particularly good doctor.

As our professional lives took us in different directions, I sadly lost contact with Michael for almost 10 years. When I heard his name mentioned again he had gained his fellowship and was practising as a thoracic surgeon, right here in the city where we'd grown up. Whereas I'd slipped into a busy but anonymous suburban practice, Michael was reaching almost celebrity status among the city's medical community. His radical approach to surgery was eliciting quite a response from the usually unexcitable surgical fraternity. I heard on the medical grapevine that he was simply refusing to take on the huge patient load typical of his colleagues, preferring a smaller practice that allowed him to take a more holistic approach to his patients. It was just this unconventional, almost maverick approach that I was chuckling over one autumn afternoon when my receptionist announced that a new patient was in my waiting room. "Mr Michael Pellini," she announced, "he says you know him."

A moment later, sitting across my cluttered desk was the instantly recognisable form of Michael. He hardly looked any older, except for the face, whose serene expression had once won him such admiration, was shaded and lined with signs of distress. Patients so rarely shock me any more, but I confess I stared in abject disbelief when Michael Pellini, the hero of my university days, told me calmly that he had contracted the HIV virus.

For the next year, Michael Pellini was my patient. Once every two weeks he would attend my consulting room and we'd discuss his medication, his progress and myriad opportunistic infections that he was developing with increasing frequency. More poignantly, as it turns out, I became his confidant, his friend and the sounding board for his remarkable philosophies on life and death. The relationship was mutually rewarding and harmonious, but for one major point of disagreement between us – Michael intended to continue practising surgery for as long as he possibly could, and didn't intend telling anyone that he was HIV positive, least of all his patients.



Patrick Maloney.

Continued on Montage 19