The age-old battle for supremacy between Melbourne and Sydney appears to be over — with both cities winning.

That's the opinion of Monash geographer Dr Kevin O'Connor who, together with Dr Chris Maher and research assistant Sandra Beard, has just compiled *Monitoring Melbourne, 1988*, the first city performance report in Australia.

O'Connor says that data accumulated for the report compared with similar data for Sydney clearly shows the two cities are becoming more specialised and different from each other.

"Sydney has won the fight to become Australia's international finance centre and headquarters of the media, but Melbourne dominates research and development and the manufacturing and transport industries," he said.

*Monitoring Melbourne, 1988* presents in graphical form with a minimum of text, a series of key indicators which, taken together, provide a snapshot of the metropolitan area's economic health and progress.

The idea is to create a database which can be used to analyse Government policy and allow people to ask more intelligent questions about where the city is going. Its authors hope to produce it annually.

The outstanding features of this year's report are the continued development of Melbourne's southeast, and the greater balance achieved in the western suburbs.

"We want to release *Monitoring Melbourne* at about the same time each year. It's a politically sensitive exercise because the changes we detect often relate directly to Government policy or lack of it.

"In putting it together we tried to select measures that would make sense over a period of time. But we soon recognised that you can't take the city in isolation, so we had to put Melbourne into a national context," O'Connor said.

Fortunately the monitor was able to draw upon detailed data on the Australian states collected by O'Connor for a project financed by the Australian Research Council in which he is analysing the distribution of economic activity within Australia.

"Part of the exercise is a matter of sticking pins into a whole lot of myths and finding they are mostly full of hot air."

For instance, O'Connor said, the public perception of change in Australia was that Queensland and Western Australia were winning, while Victoria and New South Wales were on the decline. In fact, Victoria attracted nearly half the value of all new factories built in Australia in 1986 and 1987.

"The Australian economy is becoming even more concentrated on Sydney and Melbourne. People don't seem to realise that Melbourne and Sydney only have to shrug their shoulders to create almost as much activity as the economy of Queensland in a whole year."

O'Connor says he was surprised to find just how shallow the Queensland economy was. "The only real areas of activity where Queensland plays a significant role seem to be hotels and shops."

Continued overleaf
Annual checkup finds Melbourne healthy

From Page 1

And as for the great exodus of people north, O'Connor comments that it represents a movement of only about two per cent of the population. "There is a surprising rigidity in the distribution of population in Australia."

In fact, contrary to Toffler's ideas that decentralisation would be the hallmark of the electronic age, Australia seems to be shrinking back into Sydney and Melbourne. The communication technologies that make it easier to decentralise also make it easier to centralise.

"The technology that makes it easier to set up a factory to manufacture things in Alice Springs, also makes it easier to service Alice Springs from Sydney or Melbourne."

Monitoring Melbourne, 1988 itself begins with an overview using population and commercial construction figures, then documents national activity in terms of population, immigration, the labor market, air traffic, tourism and the movement of freight.

"There is no doubt that Melbourne is healthy, but it is no longer the commercial heart of Australia. It has developed lots of other areas of strength."

For instance, Melbourne is still one of the world's most important container ports. "More than 40 per cent of all containers handled in Australia move across the Melbourne docks. Melbourne and Sydney handle about the same level of incoming cargo, but Melbourne handles much larger volumes of outgoing cargo.

"Melbourne runs much more smoothly as a port. It has better deep sea access, better land facilities and the connections to Adelaide and Sydney are 24 hours or less."

Two areas in which Melbourne is not doing as well as it might are tourism and air traffic. "Victoria's share of international tourists has fallen in recent years, after a peak in 1985. This situation is reflected in a recent decline in hotel construction. Victoria's share of hotel construction taking place throughout Australia remains at a low level. "Melbourne's international gateway role for air travellers has remained below that of Sydney. Improvement will be important to business development in Melbourne."

For internal analysis Melbourne is divided into eight regions — northern, outer eastern, inner eastern, Westernport, inner southern, central, western and northwestern — which are compared using data on population, building and construction, labor markets, house building and house prices.

O'Connor said the most arresting feature of the picture of Melbourne was the consolidation of activity in the southeast.

"I was struck by the strength of the mix of activity in the southeast. This is reflected not only in population, but also in factory building and labor demand. "But there is tremendous residual power in the central business district. It has attracted at least 70 to 75 per cent of the office building since 1981 and is booming because of the need of manufacturing companies for the services of lawyers, accountants and advertising agencies, and for contact with government."

"And the Western suburbs are a good deal more vital than most people think."

The final section of Monitoring Melbourne, 1988 is given over to analysing Government policy for the city on the basis of the data presented. While the report makes no recommendations, it does give an idea as to whether the Government's objectives are being achieved or not. It also points to where there is no data available to be able to come to a reliable conclusion.

"We have now drifted away from management by 'the grand plan'. In fact, the proportion of activity over which the Government has control is small, and its capacity to change land use limited."

The Monitoring Melbourne project was launched with a Monash University Special Research Grant. After deciding which indicators it wanted to use, the group collected the necessary data from relevant bodies, such as the Bureau of Statistics and Department of Aviation. It then used a simple spreadsheet to record and bring the data together.

O'Connor said that while other cities overseas had established such monitors, no other Australian city had attempted it. "We would like to do it for all Australian cities. The technology is there. All we need are the resources."

He believes the project eventually will become self-supporting, providing useful work experience and projects for geography students. "After one or two years of putting together such information, we should be well placed to mount one-day conferences on key issues in the management of Melbourne."

"And, in an insert to the report, we could focus on a different issue each year. That would provide good material for honors and masters projects."

Monitoring Melbourne, 1988 will be released at a seminar in the AMP Theatre, AMP Building, 335 Bourke Street, City at 4.30pm on Thursday 20 October. Copies are available for $55 each from the Department of Geography and Environmental Science.
Fossils fuel thrust against arthritis

After raising a family, biochemist Dr Merril Rowley took up searching for fossil protein. It led to a new thrust in the fight against arthritis.

A MONASH BIOCHEMIST has shown that rheumatoid arthritis is associated with auto-immunity, where the immune system turns against the body itself.

Dr Merril Rowley, who returned to research only five years ago after a 12-year break to raise a family, detected high levels of antibodies to the common structural protein collagen in the joint fluid of arthritis sufferers — a sign that the immune system has attacked the fabric of the joints.

While the work did not determine the cause of rheumatoid arthritis, it confirms a 20-year-old suspicion that auto-immunity may play a role in the disease. Rheumatoid arthritis is a chronic disease of the joints which affects about one Australian in 40. It is more common in women than men, and can vary in severity from an annoying pain to a serious, crippling bodywide condition.

In recognition of the importance of her research, Rowley recently was awarded the Arthritis Foundation of Australia Bicentennial Research Fellowship which will support her work for another two years.

During that time, as well as trying to clarify the role of auto-immunity in rheumatoid arthritis, Rowley will study the relationship between the level of collagen antibodies and the course of the disease. If the end condition of patients could be predicted from antibody levels, she says, it would allow doctors to target treatment better, particularly the use of drugs.

"There are a number of other spinoffs from the work in terms of techniques and information about auto-immune diseases in general. In fact, there is an enormous overlap in the ways of tackling research between most of the auto-immune diseases -- multiple sclerosis, systemic lupus, diabetes, rheumatoid arthritis."

Merril Rowley completed her PhD in immunology at the Walter and Eliza Hall Institute of Medical Research in 1969. There, she worked with Dr Ian Mackay, who is now at Monash University’s Centre for Molecular Biology and Medicine.

Then she got married and had a family. It was only in the early 1980s that she began to think about research again. And her way back was paved with fossils.

"I joined the Friends of the Museum to do some voluntary work to see how things went. I ended up working with Dr Tom Rich in the fossil department curating the mesozoic plant collection.

"One day Tom came in with a paper about using antibodies to look for the protein collagen in fossils. Now that was something I could understand and I felt I knew something about. I told him it would be easy if we had the facilities, and the next thing I knew we had in a grant application to set things up."

Dr Mackay offered Rowley space in his laboratory. He was interested in developing techniques of working with collagen antibodies to verify reports of auto-immunity in arthritis sufferers.

Antibodies are manufactured by specialised cells called lymphocytes to protect the body from foreign organisms or chemicals. They depend for their action on their ability to bind specifically to these alien objects.

Any foreign chemical which enters the body can stimulate production of an antibody which binds to it and it alone, in most cases rendering it inactive. In an auto-immune condition, the body’s own chemicals stimulate the production of such antibodies, potentially creating havoc.

Because antibodies are so specific to the compound to which they bind, they can be used to detect the presence of that compound.

Rowley initially developed her technique to detect collagen attached to fossil bones. She ground up fossil bone and poured a suspension of it onto a plastic plate to which collagen would stick. Next she washed that plate with collagen antibody which would bind to the collagen residue.

A second wash contained a radioactive compound which would in turn stick to the collagen antibody. Then it was a simple matter to try to detect any radioactivity.

"We tested the bones of large, flightless birds, and despite the small number of samples we were able to find collagen up to 10,000 years old. We even got a faint signal from a fossil 10 million years old. The incredible thing was that the protein’s structure had changed so little in that time.

"Where we could detect collagen, we were then able to have a look at how common it was and if it occurred in specific places."

The arthritis work began with testing the serum of patients who already had been genetically tissue-typed.

It turns out that people with the DR4 tissue-type (a genetic measure similar to blood-typing) are particularly susceptible to rheumatoid arthritis. More than 70 per cent of arthritis sufferers are DR4 positive, even though they make up only 30 per cent of population.

For this research, because Rowley was looking not for collagen but for collagen antibodies, she used her newly-developed technique in reverse. She prepared a batch

Continued Page 7
Research centre proving safety no accident

Melbourne cyclists are three times more likely to have an accident riding on the road than on the footpath, a study by the university's Accident Research Centre has found.

And riding on the footpath seems to pose little risk to pedestrians, the study concluded. In fact, on the basis of bicycle accident reports and hospital records, cyclists account for only a handful of injuries to pedestrians each year.

The study is one of the first examples of the useful research beginning to flow from the Accident Research Centre.

A second report published earlier this year showed that, although about six out of every seven Victorian children were wearing safety restraints in vehicles, one of these would not be strapped in properly. And one in ten of the restraints would not be fitted correctly.

The Accident Research Centre was established at Monash 15 months ago with guaranteed funding from the Road Traffic Authority and the Transport Accident Commission of $1 million over three years.

Its director, Dr Peter Vucan, a former chief general manager of the Road Traffic Authority, says: "The aim of the centre is to find ways to reduce the number and severity of accidents, and thereby reduce the cost to the community."

"In 1970, Victoria was amongst the worst places in the world for road deaths, now it is one of the safest. But it was felt by the Government that to make further breakthroughs in the area of road safety, the type of multidisciplinary research of which universities are capable was necessary."

So the centre was set up at Monash, but with a structure to make it independent, multidisciplinary and inter-institutional. "For instance, it was decided that the centre should not be attached to any particular faculty, but that its board of management would be responsible to the Vice-Chancellor alone.

"Professor Ross Day of Psychology is chairman of the board of management and Professor Noel Murray of Civil Engineering its deputy chairman. The university's comptroller, Mr Peter Wade, is a member of the board."

"In fact, there are people on the board and the research advisory committee from a wide range of disciplines — engineering, medicine, psychology, law, education. And we have research associates from several institutions — Melbourne and La Trobe Universities, the Chisholm Institute and the Road Traffic Authority."

At present the centre employs nine researchers, five of whom are full-time. Already it has managed to attract an additional $500,000 worth of contract research.

Its road safety research is founded on a detailed analysis of a computerised database containing all the police road accident reports over a five-year period. Researchers are using this data to get a better idea of the patterns of road accidents — what sort of accident occurs when, where, and how, and what groups of people are involved.

The idea is to identify common threads worthy of investigation. But several of the problem areas already are well known, and research projects on them are well underway.

For instance, in Melbourne one road accident in five occurs just where the traffic is most controlled — at traffic lights. A group at the centre is analysing photographs taken by red light cameras to try to get a better understanding as to where in the cycle people try to run the lights. The group is also investigating the impact of greater control of turns, using red and green arrows.

An evaluation of the effectiveness of the Road Traffic Authority's accident blackspot treatment program has shown a reduction in casualties of more than 40 per cent at treated locations. In monetary terms this amounts to savings of up to 10 times the cost of treatment.

The benefit is so clear that the centre has set up a preventive research program to try to define what makes an accident blackspot — the number of lanes, curvature of the road, the quantity of turning traffic. "We are trying to see if we can identify places looking for accidents to happen, so we can fix them up before they become blackspots."

Another large project focuses on driver fatigue. It was commissioned earlier this year by the Federal Office of Road Safety on the basis of research which shows that fatigue is an important factor in road accidents.

"We want to get a better understanding of the fundamental nature of driver fatigue. For instance, does it come on gradually or suddenly? Can we devise effective countermeasures such as an eye closure detector that would warn the driver he or she was getting drowsy?"

In addition to its research, the centre is busy building solid links with the local community, and nationally and internationally. These range from collaborative research to consultative work and academic exchanges.

For example, the centre is working with Associate Professor Frank McDermott of the Monash Department of Surgery at Alfred Hospital on an independent evaluation of the impact of the new Trauma Centre (under construction at Alfred Hospital) on the statewide management of road accident victims.

Already, the Accident Research Centre has achieved a measure of international recognition. There have been eminent visitors from Britain and North America, and two staff members recently spent four weeks in China studying and advising on road safety in three provincial cities.

Although the Accident Research Centre was established initially to look at road accidents, its brief ultimately included domestic, industrial and recreational accidents. It is just about to start its first project outside of road safety — on accidents involving children not on the road.
Bicycle study brings safety to a head

The Victorian Government has given nearly $85,000 for research into head injuries in cyclists to the Monash Department of Surgery at Alfred Hospital and the Road Trauma Committee of the Royal Australasian College of Surgeons. Since 1982 research by a team working under the direction of Associate Professor Frank McDermott, Victorian chairman of the Road Trauma Committee, has underpinned an awareness campaign which has seen the proportion of bicycle riders in Victoria wearing helmets rise to the highest in the world.

The latest grant will extend a study to document the impact wearing helmets is having on the level of road death and injury to cyclists.

"We are keeping a daily watch over all the pedal cycle casualties seen by 10 metropolitan hospitals and the Geelong Hospital," McDermott said.

"The preliminary results are clear. In 1987 and early 1988, for instance, there were 988 casualties and ten deaths, most from head injuries. None of those who died were wearing helmets.

"Of those wearing helmets 22 per cent sustained some sort of head injury, but in those not wearing helmets, the figure was 31 per cent. Overall, serious head injuries were twice as common in those not wearing helmets."

As part of the study Technisearch, the commercial arm of the Royal Melbourne Institute of Technology, has been commissioned to examine and test the helmets of cyclists who have sustained a blow to the head. The idea is to evaluate the forces involved and assess the performance of the helmet.

So far, out of the 20 helmets examined, 12 cases of the point of impact did not coincide with the region of greatest strength of the helmet, suggesting renewed attention should be paid to helmet design. It is hoped to increase the number of helmets tested to 50.

McDermott, who is an associate of the university's Accident Research Centre (see previous page), stressed that in no other place in the world could a statistical comparison between cyclists wearing and not wearing helmets be made, because only in Victoria do sufficient numbers of cyclists wear helmets.

He said that the Road Traffic Authority last year estimated that in Victoria 68 per cent of primary school, 20 per cent of secondary school and 45 per cent of adult cyclists wear helmets when riding bicycles. This compares with figures of about two per cent overall for the US, less than five per cent for the UK and Scandinavia and less than 10 per cent for the other states of Australia.

The main reason that Victorians wear bicycle helmets has been a very successful campaign led by McDermott and the Road Trauma Committee, and supported by the State Government. That campaign was stimulated by research.

"The wearing of helmets was made compulsory for motor cyclists in Victoria in 1964. This reduced motor cycle fatalities by one-third.

"But pedal cyclists were still uncontrolled and totally unprotected when we became interested in 1982. And in two out of three of bicycle fatalities the riders are aged 17 or under, so death has a big impact.

"I began a study with Geoff Klug, a neurosurgeon then working at the Royal Children's Hospital and at Alfred Hospital, to compare pedal with motor cyclist injuries in the years 1978, 1979 and 1980. At that time all motor cyclists but virtually no cyclists wore helmets.

"We went through the medical records in the Melbourne Metropolitan area of more than 500 bicycle accidents and more than 600 motor cycle accidents.

"What we found was that more than 60 per cent of the pedal cyclists had sustained head injuries, but only 26 per cent of the motor cyclists. For severe head injuries, the figures were 10 per cent for cyclists and four per cent for motor cyclists."

Faced with these results, the Road Trauma Committee decided to write to school principals to draw their attention to the figures. The hope was that they would begin to introduce regulations making helmet-wearing compulsory if students wanted to ride bikes to school.

Some principals did so, but the College of Surgeons soon recognised that the price of helmets was a significant barrier to helmet-wearing. So, in an attempt to get the price down from about $50 to about $30, the College encouraged schools to link together and buy helmets in bulk by tender.

But even this was not enough and the College began to consider asking for Government assistance. In this, Frank McDermott was joined by Melbourne Herald journalist, Peter Fitzgerald and the father of a boy from the Western Suburbs who had been killed on his bicycle, Mr Hollingsworth.

Together they secured a meeting with the then Minister for Transport, Mr Steve Crabb, and the result was the 1985 Victorian Government scheme for a $10 rebate on all Standards Association of Australia approved bicycle helmets sold.

The scheme was an outstanding success, directly resulting in sales of 37,000 helmets and indirectly giving a huge boost to the idea of wearing a helmet when riding a bicycle. It has been renewed regularly since, with sales of helmets in Victoria now totalling more than 150,000.

The next step, promoted by the College of Surgeons, is a call for Victoria once again to lead the way in road safety, as it did with car safety belts, and make the wearing of approved helmets mandatory for cyclists. McDermott says the idea has the support of all political parties. Legislation is foreshadowed for 1989.
Law library sells legal information

The Monash Law Library has mounted its index to current Australasian law periodicals as a commercial electronic database able to be used by practising lawyers.

As the Australasian Legal Literature Index (ALLI), the database is now part of the Law Institute of Victoria's electronic communications network, LINK (Lawyers Information Network).

For the cost of a local call and an average fee of between $1 and $3 depending on connection time, a lawyer anywhere in Australia with a telephone-linked personal computer or terminal can now search the index for legal information contained in Australian and New Zealand law journals, conference proceedings and book reviews. This information can then be stored and printed out.

Monash has one of the largest law libraries in Australia, and its coverage of Australasian legal literature is comprehensive and up-to-date.

The idea for mounting the database came from reference librarian, Ms Rosemary Bunnage, who saw it as a means of turning a manual printed index into an electronic database which would be of great use to staff and students as well as filling a research need for the legal profession.

She approached law lecturer, Mr Tim Pinos, who already was working part-time at the Law Institute setting up the LINK communications system. Part of the LINK package was to give lawyers simple access to such commercial electronic databases, and the Law Institute had made it known that it would be interested in hearing from people who could put up new products such as ALLI.

The project was financed with $10,000 of seed money provided by the university's Centre for Commercial Law and Applied Legal Research. It paid for the software, computer space and labor necessary to mount the database.

The index to articles published in 1988 has been set up and running and hooked into LINK since late last month. It represents four months hard work by Bunnage, indexer MaryAnn Kiel, computer programmer Doron Karliner and staff of the university's Computer Centre. Their success in getting ALLI operational has stirred interest in North America, and Bunnage has been invited to attend a conference in the US next year.

Costs from now on will be mainly in terms of labor to keep the database up-to-date. But the library also is gradually back-dating the index to 1984 and further, if it is deemed necessary.

Details of pricing and the commercial side of mounting the database were worked out with the help of the university company, Montech Pty Ltd.

The Law Institute decided to set up LINK initially to give lawyers a one-stop access point to an increasing number of computerised Government services, such as corporate affairs data, land titles and court listings and records.

Using hardware and software available through Telecom, Pinos was able to put together a network that would not only allow lawyers to use the computerised government information, but would also give them access to electronic mail, international fax and telex facilities, Law Institute Information (including the daily menu at the Snail 'n Bottle Restaurant), news stories from the Australian Financial Review, share prices and a series of commercial databases including ALLI.

Having been accepted as a member of the LINK service, users are issued with a LINK identification number and password. The password can be changed at any time to protect security.

Connection into LINK can be made through the telephone system from anywhere in the world, and through Austpac for the price of a local call from anywhere in Australia. Once the connection has been made, the user pays for the time he or she is in the system — about 50 cents a minute for LINK and an additional time-based fee to use any of the commercial databases.

All fees are charged automatically to individual user numbers. Billing and collection are carried out by the LINK organisation itself.

For further information on ALLI, contact the database manager, Rosemary Bunnage, on 565 2603 and for more on LINK contact Tim Pinos on 565 3379.
Helping to put statistics on the road

As well as the larger contracts which attract most publicity, Montech actively encourages and supports small to medium-sized projects with industry. Here are some examples.

The Department of Mathematics, in conjunction with Montech, is providing statistical analysis of road condition surveys to the Road Construction Authority (RCA).

In recent years the authority has employed people to assess the condition of rural roads in various regions of Victoria.

Each of these assessors surveys a selected set of road stretches once a year. The roads are rated subjectively according to a series of criteria.

To standardise ratings and maintain a level of consistency between assessors a 'standard rater' assesses stretches of road in selected regions.

Senior lecturer Dr Malcolm Clark and a Mathematics Department computing team which includes programmer, Mr Michael Snowden, are conducting a series of stringent statistical tests on the road survey data to determine the consistency of assessors, both among themselves and against the standard rater. They also are examining the possibility of significant differences between each of the regions surveyed.

The road condition data will be used by the RCA in a pavement management system which it is now developing.

The Centre for High Resolution Spectroscopy and Opto-Electronic Technology manufactures and markets through Montech a series of high voltage square wave generators designed to be used in microwave spectroscopy for chemical analysis and detection.

In the first year of their release to scientific laboratories worldwide, generators have been sold to several laboratories in North America and Europe.

As noted in a previous issue of the Monash Review (4-88), the Centre also has been successfully marketing a charged particle beam simulation program, MacSimion, in the US.

MacSimion now is selling in Australia, and will be used for teaching and research at other universities.

The Victorian Department of Industry, Technology and Resources has contracted through Montech the Graduate School of Management to do a survey of the potential market for robot obstacle avoidance software developed within the university's Department of Electrical and Computer Systems Engineering.

And Montech also is assisting the Public Sector Management Institute with several large consultancy contracts involving Professor Henry Ergas and other institute staff covering a wide range of telecommunications related issues.

Ergas formerly was an adviser to the Organisation for Economic Co-operation and Development (OECD) in Paris, and has been an adviser to the Federal Minister for Transport and Communications on telecommunications economics and management.

Fossils fuel new arthritis thrust

From Page 3

of collagen and washed it with the patients' sera, labelling any antibody that stuck to the collagen radioactively.

"We found that arthritis patients did indeed have antibodies to collagen, and that those of tissue-type DR4 had high levels of them. So it seems auto-immunity is an important factor in rheumatoid arthritis."

Rowley also studied the synovial or joint fluid of patients with diseases of the joints, among them arthritis sufferers, whose joints tend to swell because they produce large volumes of the fluid.

She found levels of antibodies in joint fluid from those with arthritis which were very much higher than in their sera, and also very much higher than levels in the joint fluid of those with other joint conditions.

"This suggests not only that the production of auto-immune collagen antibodies is specific to rheumatoid arthritis, but that it happens in the joints themselves."

Now she has developed her techniques, Rowley is planning to investigate more closely the details of the auto-immune response in rheumatoid arthritis. But, in collaboration with Dr Ken Muirden and rheumatologists at the Royal Melbourne Hospital, she is also starting a study which could be of more immediate benefit.

"We will be testing rheumatoid arthritis patients over time to see if the levels of antibodies we detect bear any relation to the course of their disease. If we could predict a patient's end condition, doctors would be able to target therapy better."

"We now have good drugs to control arthritis, but they all have side-effects. If we knew, for instance, that the disease was likely to be very destructive, then we could start drug therapy earlier and hit the disease harder."
Illiteracy begins at home, study finds

A MONASH PhD student in education has established a link between adult illiteracy and disruption of family life during childhood.

The research, by Ms Gina Sabto, finds that illiteracy was often linked to family disruption during childhood. The study conducted by Sabto involved 17 students from various countries and aimed to understand the factors that contribute to illiteracy.

Sabto's interest in illiteracy was sparked by the works of Brazilian educator Paulo Freire, who recognized a connection between literacy and political power. Freire's ideas about illiteracy, as well as those of Habermas and Melanie Klein, were integral to Sabto's research.

She interviewed and obtained biographical data on 17 students from the adult literacy classes of the Council for Adult Education. To illustrate and amplify her thesis, she constructed detailed case histories from these data, which showed the impact of language on individuals and how it can be used to control and manipulate.

In Sabto's work, the material proved to be most relevant was the subjects' memories and perceptions of their childhood relationships with their parents. Sabto's initial approach was to explore and test the existing influential sets of ideas about illiteracy. In addition to Freire's theory that literacy enables people to realize their aspirations, she looked at the views of Habermas, that a good grasp of language is a liberating tool since it allows a person to defend himself or herself against domination and exploitation by others.

Neither of these theories seemed to have much to say about the cause of illiteracy. So she then turned to the ideas of Don Swift, who believes that illiteracy occurs when the goals of the family and those of the education system are at odds with each other.

But Sabto quickly realized that while Swift's conditions of "cultural clash" undoubtedly existed in the case of many of her subjects, his theory could not explain why they, and not their siblings, failed to learn to read or write.

From then on, typically Sabto's subjects would drop out of further education, learning to cope with the stigma of illiteracy by developing techniques to hide or disguise it. But the price they paid was terrible: shame, depression, menial jobs and a lack of independence.

The only way out of this vicious cycle comes with the open expression of anger. Instead, Sabto found that those who returned to literacy did so after an angry resolution to a crisis. And this crisis often was provoked by the unfairness of their job situations, a pay rise or position change witheld.

"When they did express their anger — against their boss or workmates — they became liberated from their own view of themselves as victims, taking responsibility to 'repair' their lives. This is most often expressed in a search for the literacy they had once lost and it marked their reintegration into the outside world signalling the end of the mourning process."

Commenting on Sabto's results, one of her supervisors, Dr Alan Rice of Education said: "These findings suggest exciting new directions for educational research. For instance, it is now worth knowing the incidence across the family of illiteracy due to family trauma and whether families from specific groups are more vulnerable."

"The practical implications are equally significant. Teachers responsible for literacy may find that focusing on particular skills is far less productive than attending directly to the emotional well-being of their students."

"Similarly, administrators responsible for anticipating educational problems, and for lobbying for resources to deal with them may find it useful to think of literacy rates as fluctuating with the incidence of family crisis, which may be tied to broader social and economic forces. An economic recession, for example, may increase stress in families and reduce literacy levels."

Photo: Tony Muller

Gina Sabto of Education in the Mt Scopus College library.

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