With migrant pupils, the eyes have it

AUSTRALIAN teachers may need special instruction in the non-verbal communication of eye and body “language” to help them get on better with migrant pupils.

The idea comes from a special study by a Monash educational psychologist, Dr. Terry Hore, director of the university’s Higher Education Advisory and Research Unit (HEARU).

He compares such a scheme with one now used at Oxford University to teach English diplomats how to cope with the non-verbal behaviour patterns of their Arab colleagues.

In the present study, financed by Australian Research Grants Committee grants totalling $13,000, Hore has concentrated on teacher-pupil eye contact—and come up with evidence suggesting it could play a vital role in the classroom. It appears to be particularly valuable to newly-arrived migrant children with a poor knowledge of English.

These migrant pupils, he says, can be likened to deaf children who have yet to learn finger-spelling, and who stare at a speaker’s face in an effort to pick up clues to what is being said. Australian-born children and migrant children with a good grasp of English rely mostly on the verbal message and its accompanying intonation.

The study also showed that teachers spent twice as much time seeking eye contact with “low language” migrant children...suggesting they were subconsciously using it as a method of monitoring performance.

Hore used hidden TV cameras to record the amount of eye language between 58 pupil-teacher pairs performing a co-operative learning task. The teachers, all specialising in English, were randomly selected from 157 postgraduates in the Monash Faculty of Education.

Language groupings

The children came from grades four and five at Springvale state primary school in Melbourne. They were selected in three groups: Australian-born, migrant children who had been in Australia for four years or more and whose use of English was fluent, and children here for two years or less with limited knowledge of the language.

Type of task set for the teacher-pupil pairs: deciding, through discussion, which of eight cards on a card held by one of them matched the single animal (left) on a card held by the other. Teachers and pupils could not see what was on the other’s card. Two practice and six more complicated sets of animal cards were used.

A special “room within a room” was built for the tests. This contained a table with facing chairs and a microphone linked to recording equipment. Remote-controlled, zoom lens TV cameras were set up behind fly-wire screens at either end of the room to secretly record full-face shots of the teacher-pupil pairs as they sat at the table.

The camera signals were fed into a special effects generator to provide a split-screen videotape recording of both faces for later analysis. The idea was to tabulate both the number and duration of...
Fantasy that! — a Tolkien original

PROFESSOR Arthur Brown, of the department of English, is becoming very popular among Monash fans of English fantasy author J. R. R. Tolkien. What has leaked out that Brown, himself a Tolkien enthusiast, owns an original manuscript by the creator of *The Hobbit* and *The Lord of the Rings*, who died in 1973.

What’s causing particular excitement among the Tolkienites is that the manuscript is an unpublished work. Titled *Do Worst*, it is based on a fact, not fantasy — a humorous account of what Tolkien described as “the howlers” unwittingly uttered by students taking the oral examination in English at Oxford University in 1932.

Tolkien, in his capacity of Rawlinson and Bosworth Professor of Anglo-Saxon at Oxford’s Pembroke College, was one of the examiners. He presented *Do Worst* to a close friend, Professor R. W. Chambers, as a Christmas present the following year.

It is a poem, of about 2200 words, which Brown describes as “written in the metre and style of the great Middle English (14th Century) poets”.

“More particularly,” he says, “it is based on a well-known poem of that period called *Piers Plowman*.

“The meaning of *Piers Plowman* is the quest for God, in three stages—Do-Well, Do-Better, and Do-Best. The first stage, Do-Well, is the life of active labor in the world. The second, higher stage, Do-Better, is the clerky or monastic life of renunciation, charity, poverty, and contemplation. The third, highest stage, Do-Best, is represented by the man who, having renounced everything, is called back into active life to rule and direct others as a Prince of the Church.

Lourdains and lubbers

“The opening lines of Tolkien’s poem, with their alliterative metre and description of the setting, are also reminiscent of *Piers Plowman*:

> In a summer season when sultry was the sun
> With lourdains and lubbers I lounged in a hall,
> And wood in his wits was each wigt as meseemed:
> On his head was a hat as hard as a board.
> On his neck was there knotted a noose all of white.
> With bow big and broad as a butterfly’s wings . . .

>     the references being, of course, to the mortar boards and white bow ties worn by students at Oxford on the occasion of their examinations. Much of the humor in the poem depends upon a knowledge of the procedures at the Oxford ‘orals’, and cannot easily be explained to the uninstructed. But the reaction of the examiners, Plato, Britoner, Regulus and Grim, to the halting and largely nonsensical answers of the unfortunate Atkins to their questions, and the sentence passed by them on him, will perhaps give some idea of the poem’s flavor:

> Sir Plato turned pale as with pang at the heart,
> Cast his hood o’er his head and hid up his face.
> Sir Britoner bawled forth, ‘The bastard is mad!’
> Sir Regulus retched and wrinkled his nose,
> Sir Grim rent his gown and gulped in his throat,
> Then spinfoot he sprang and sprinted to the bell.
> An usher then entered and asked what he wished.
> And the clerks with a clamour all cried out together: ‘Hale forth this harlot and how him with staves!’
> Kick him from these cloisters to Carfax and further,
> Then plough him in pieces with ploughshares keen.
> As red hot as wrath—no ruth he deserves!’

Tolkien took a lot of trouble preparing the manuscript as a gift. It is ornately hand-written and illuminated on high-quality paper (19cm x 24 cm) and bound in a hard, vellum cover. On the front, stamped in gold, is

**DO WORST**

**QUOD J. R. R. TOLKIEN**

On the inside back cover is inscribed “Bound by Douglas Cockerell & Son, Letchworth Garden City”. This is in a small, neat handwriting, presumably the binder’s. “Obviously he did it as a special job for Tolkien,” says Brown.

The book fits in a specially-made cardboard slip case. This is covered in a typical Cockerell paper in a marbled pattern. Tolkien’s illumination of the handwritten text consists of capital letters in decorative form and colored with various inks, plus a number of decorative scrolls.

Attached to the inside of the book’s back cover is a letter in Tolkien’s normal handwriting. This is on a sheet of note-paper embossed at the top with Tolkien’s address: 20 Northmoor Road, Oxford. The letter, dated December 21st, 1933, reads:

> “My Dear Chambers,
> Thank you for your note. I am sorry

you are—or were—unwell. My very best wishes for a happy feast and for all blessings in 1934.

Yrs very sincerely,
J. R. R. Tolkien.”

In a postscript, he adds:

> “I send you—it may possibly amuse you—a report on last year’s Examinations in Oxford: held by myself, Wrenn, Brett-Smith, & C. S. Lewis (whose Pilgrim’s Regress you may have read). The howlers are genuine except the nonsense about Percy S.

Yrs J.R.R.T.”

R. W. Chambers, Quain Professor of English at University College, London, died in 1942, says Brown. He left *Do Worst* to Miss Winifred Husbands, a senior lecuzzor at the College and his secretary for many years. She presented it to Brown when she retired in 1957, a few months before her death.
GOATS, gardens and breast feeding are an unlikely combination for a doctor to recommend in a "get fit" program.

But they are three of many remedies prescribed by Dr Trevor Cutter of Monash for improving the health and welfare of Aborigines in central Australia. Cutter, from the Department of Social and Preventive Medicine at the university's Alfred Hospital medical school, recently completed a survey of health and living standards in Aboriginal fringe camps around Alice Springs.

Apart from improved medical care, the camp dwellers need better sanitation, housing and particularly a more nutritious diet, he says.

Cutter, who is on loan to the Central Australian Aboriginal Congress (CAAC), is now extending his investigation to scattered Aboriginal communities in rural areas.

Those living in the Alice Springs fringe camps are suffering from a 100-year time lag in health status, according to the head of the Department of Social and Preventive Medicine, Professor Basil Hetzel.

"Standards of nutrition and sanitation are as low as those of most whites in Australia a century ago," he says. "The infant mortality rate is at least three times the Australian average."

Hetzel, too, has become directly involved in the work of the CAAC, as a consultant. On a recent visit to Alice Springs he chaired a meeting between Congress members and government officials, including the Director of Health for the Northern Territory, Dr Charles Gurd.

The meeting resolved to seek federal support for new health care initiatives. The CAAC has suggested two projects: an Aboriginal health service in Alice Springs and another covering rural areas.

Response from Canberra has been favorable. The Minister for Aboriginal Affairs, Mr. L. R. Johnson, has announced a $100,000 initial grant to get things moving.

"In both cases the aim is a "total approach" embracing such things as nutrition, sanitation and housing as well as immediate health care. The proposed Alice Springs centre will serve 2000 Aborigines not reached by existing services, including more than 600 people living in the fringe camps in undesirable conditions. Estimated capital cost is $200,000 plus $120,000 a year for running expenses," Dr. Cutter says. $65,000 of the initial federal grant has been used to buy a large brick house near Alice Springs hospital for conversion to a health centre. It should be operational by September.

To begin, it is proposed to staff the centre with two doctors, two sisters, three nurses' aides and a welfare worker. As well, the aim is to set up a mobile clinic in a station wagon which can visit the fringe camps.

The health service would also tackle nutritional problems in the camps through a meals-on-wheels service. It would aim to improve toilet facilities and water supply and eventually help provide housing to replace the present lean-tos and other rough shelters, says Hetzel.

The CAAC recently bought and distributed 200 army tents which have improved living conditions slightly. But the long-term need is good quality permanent housing.

The CAAC program follows guidelines set up at a national seminar on Aboriginal health at Monash in May, 1972. There were about 70 people at the seminar, including 20 Aborigines from all parts of Australia.

Cutter investigated living conditions in 14 Alice Springs fringe camps.

His report says there was obvious evidence of malnutrition, although generally not severe, and a high rate of unemployment among those capable of working. This, plus the poor physical conditions in the camps, has led to a serious alcohol problem. He estimates up to 20 per cent of school-age children were playing truant from school at any one time.

Cutter suggests the growing of vegetable gardens should be encouraged by improving water supply to the camps and the introduction of goats could be explored. They needed little tending and would supply fresh meat and milk.

The bottle feeding of babies was a matter for concern, he says. Lack of milk storage facilities meant the custom should be discouraged and breast feeding promoted.

In instances when breast feeding was adopted, it was often stopped too early and a bottle substituted, with a corresponding high risk of the babies contracting gastro-enteritis.

THE EYES HAVE IT

... mutual glances (eye-to-eye contact) and unreciprocated glances (when either child or teacher was looking at the other without the look being returned).

"This is the first study to describe teacher-pupil visual behaviour in such a way: detail and one must seek reasons for the relationships which were found," says Hore.

"It is important to understand the complexities of these eye contacts—which occur for only seconds or split seconds at a time—for while we use these behaviours constantly, we do not do so consciously.

"A second reason is contained in the suggestion that verbal and non-verbal channels of communication can simultaneously transmit contradictory messages—for example, saying you like somebody but subconsciously contradicting yourself by avoiding eye contact.

Further research by one of Hore's graduate students, Trevor Hutchins, has used a similar experimental model using teachers from various schools working with their own pupils.

This study has shown more frequent and longer mutual gazes between teachers and the children they considered less likely to succeed. This is contrary to previous theories that there would be more rapport—"as indicated by mutual gaze—"with brighter pupils."

MONASH REVIEW

JULY, 1975
Fame for 'funny fluids' film?

YEARS ago, Hollywood produced a science-fiction thriller called The Blob, about a huge, jelly-like lump which enveloped people, digested them, and kept growing in size. It was swallowing skyscrapers before the film's hero found a way to destroy it.

It took a lot of killing. And chemical engineering research student Peter Cable, studying for his Ph.D., has some idea of the problem. He recently found a "blob" weighing more than half a tonne quivering on the floor of his laboratory—"like a giant egg white".

Fortunately this one wasn't aggressive. It was a 150-gallon batch of what he calls a "funny fluid" he is using in experiments—a solution of industrial polymer in water. This produces a thick, sticky mixture with some unusual properties.

In particular, once it starts flowing in a certain direction, its high viscosity and elasticity keeps it going... even uphill. The "blob" in Cable's workshop escaped from its container because he presumably had not noticed a small amount spill over the side.

While he was out of the laboratory, the spill continued with a self-siphoning effect, gradually increasing in volume until the whole lot flopped to the floor.

Coincidentally, Cable's work involves filming the antics of the polymer "blob" mixture. The result, however, is a little different from the technicolor Hollywood epic. Cable's production is silent, in plain black and white, and runs only 12 minutes. But it has aroused world-wide scientific interest.

Flow patterns

The film shows the flow patterns of molten polymers during the commercial extrusion process. Its importance relates to problems faced by companies in the plastics and polymers field. They are troubled by the tendency of the material to occasionally misbehave during extrusion.

In the factories, pure molten plastics and polymers, heated to temperatures up to 250 Celsius and under pressures as high as 4000 lb. per square inch, are forced through different sized dies, or nozzles, to produce anything from thick rods to fine thread.

But sometimes, instead of emerging straight and even, the material will suddenly start coming out crinkled and useless. This is known as a "melt fracture". Cable's film shows how this occurs. He has managed to film the high-speed process by setting up a small extrusion plant of clear glass tubing. Through this, he forces polymer/water solution under pressure.

Construction of the glass extrusion plant was possible following the discovery that solutions of from 0.1 to one per cent polymer in water have similar fundamental flow properties of viscosity and elasticity as pure molten polymer. The difference is that instead of needing high temperatures and pressures, the solution can be extruded at 40 lb. p.s.i., and at room temperature.

This discovery was made with a $45,000 machine in the Monash department of chemical engineering called a Weissenberg Rheogoniometer. It is the only one of its type in Australia and measures the fundamental flow properties of various liquids.

"What it has enabled us to do is substitute an uncomplicated material (polymer/water solution) for a more complex one (pure molten polymer)," says Cable's supervisor, Dr David Boger, a specialist in the field of rheology—the study of deformation and flow of fluids.

To film how polymer whirls and eddies under pressure as it is pushed towards the extrusion die, Cable added a "tracer" to the normally clear mixture. He used a material (mica flakes coated with titanium dioxide) which is normally added to paints and cosmetics to give them a metallic glitter. These shiny flakes of tracer form patterns picked up on the film.

For researchers

Cable is writing a paper on the research for an American technical journal, Transactions of the Society of Rheology, and his film is being made available to researchers throughout the world working on the melt fracture problem. Two copies have already been requested—one by the University of Dortmund, Germany, and the other by the U.S. chemical giant Monsanto.

"A lot of people are researching the problem but they are mostly seeking a mathematical solution and have limited access to experimental results of this kind," says Boger. "The film gives them something to go to town on in their mathematical modelling."

Late last year he "premiered" the film at international scientific gatherings in Britain and the U.S.

He and Cable are working on a sequel to their "blob" film. This one will use slow motion photography to show more precisely what happens in some of the more complex flow patterns of the extrusion process.