

# Research at UPEI Series

## Thomy Nilsson and the Vision and Colour Lab

By Derrick Webber

COLOUR DOES NOT exist from the physics point of view, according to Tomy Nilsson.

Rather, colour vision is "an artifact produced by the visual system to make what you see more prominent." Prof. Nilsson, Director of the Colour and Vision Lab of the Psychology department, studies colour per-

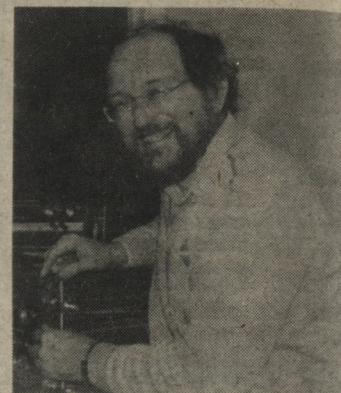
ception and uses it for further research into the complex study of human memory.

Prof. Nilsson set up the Lab in the autumn of 1984, a year after he arrived at UPEI from Alberta. Crowded into four rooms in the basement of Memorial is the equipment:

optical systems to measure perception of colour saturation, some for the perceptions of the left/right hemispheres of the brain, and a "Tachistoscope" tucked in one tiny room for research into memory. But don't let the facilities fool you; much of the research going on at the Lab is as front line as that conducted at other cen-

tres like the University of Toronto.

At present, the Colour and Vision Lab is researching the separate areas of colour vision and memory. With vision, Nilsson investigates colour saturation; how much white light it takes to mix with a colour to turn, for example, red light into pink. There has been little investigation, possibly by oversight, says Nilsson, into this aspect of colour perception.



## Duffy Science Lounge Open

Ring out the bells. The new Duffy Science Lounge is open.

The Lounge was built by the UPEI Engineering students who were looking for a place to relax after classes. Up until now, the Engineers have spent their entire days working, studying, and lounging in their two classrooms in the basement of the Duffy Science Building. Last year, it was decided that a proper lounge was

needed.

Over the summer of 1986, the Engineering Student Executive worked hard and finally managed to procure a space under the amphitheatre in Duffy. It was decided that the lounge would be a common lounge for all Science students at UPEI the Dean of Science donated money so that a wall could be built and a ventilation system installed. Then the Engineering Society carpeted, painted,

and furnished the lounge.

All science students are encouraged to come and relax in the lounge between classes, in the evening, and just any time they feel like it.

Now the Duffy Science Lounge is open to all Science students. It is located on the main floor on the side facing the Kelly Building, right next to the enclosed stairwell.

As for memory, Nilsson is conducting an experiment using the angle of lines to measure human memory. In this, the subject is allowed a brief glance at a black line tilted at a specific angle and, after an exact length of time, must match the angle of a second line to his memory of the first.

The Lab also experiments with memory with the unique

approach of using colour itself. Usually, most memory research uses a subject's ability to recall pictures or words as a test, but by employing colour, Nilsson can measure not just whether the subject is right or wrong, but how far off they are.

"There is more known about colour vision", says Nilsson, "than any other brain function." This is because the perception of colour is much easier to measure than other brain perceptions like recognizing figures. "Colour vision is not as complex as seeing patterns," he says, "but it is more pronounced." Investigation into brain perceptions is a very important field at present, having direct applications into the understanding and development of computer vision systems. Such systems have been advancing at a very slow rate, mostly because it is difficult to create a mechanical system for perception when we don't even understand how our own brain accomplishes these tasks.

Since UPEI does not have a graduate studies program yet, Prof. Nilsson employs a few graduated psychology students to act as subjects and assist in research, as well as undergraduate students. The Lab is very small, but has received some prominence lately with a write up in the NRC's Canadian Society for Colour newsletter. Nilsson says that he is in contact with other researchers over an "informal" network using a new computer communications network called Netnorth. This network includes researchers as far away as Australia and Holland.

The Lab is financed through the federal government's NSERC council. This council provides funding to universities in two ways; through direct grants to researchers, plus a grant matching the amount awarded given to the research institution to use in funding other areas of research.

When asked about funding, Nilsson expressed concern that  
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## CHEM QUOTES

or... "What in the World isn't Chemistry?"

Yes, there is a chemistry sub-culture here at UPEI, and we at The Gem will give them their time to speak, even though none of them has come forward to write for us. Therefore, we intend to show them just how easy it is to write a short column on "The Chemmy Way of Life". We asked one of our staff writers (a Business Student) to come up with some puns and short quotes that would express the uniqueness of this minority's point of view.

Just in case you don't know any Chemmy's, their lair is in the tall, smokey and smelly building in the center of campus, commonly called "CASS", which means in their language, "Chamber of Smokey Knowledge". Go visit them — they are a friendly group. However, your first visit may bring a tortuous transaction with your lungs, so try to find a gas mask first. The Chemmy's have adapted to their surroundings by now, and most of the dedicated students think our air is unusual, but they can survive in it as well as their own.

Now you don't have to go 4000 miles to see an ethnic minority group. We've got our own right here on campus. Take your anthropology class out on a field trip, and save some money this year! Live a little. If you hurry, you will get the scoop on them before the field workers from National Geographic come.

Old chemists never die — they just fail to react.

Chemists have solutions.

Absolute relationships are obtained by degrees.

There is no heavier burden than having "great potential".

Resistance begins at ohm.

Cryogenics is cool.

Everyone has Avogadro's number.

All great discoveries are made by mistake.

If you can't understand it, it's intuitively obvious.

A mole is a chemists best friend.

Kinetic energy has no potential.

Would "ohmlettes" be an electrician's breakfast?

Old chemists never die — they just reach equilibrium.

Research is the process of going up blind alleys to see if they are blind.

Chemistry is our first language for talking about rare substances.

If it weren't for "the last minute", things would never get done.

Biology is for the birds and the bees.

Energetic biologists are mitochondriacs.

Biology grows on you.

Chemistry is a foreign language twice over. Strange terms for strange things.

Ideally, chemistry's a gas...  $PV = nRT$

Almost anything that you do will be insignificant, but it is important that you do it.

If you're not part of the solution then you're part of the precipitate.

Nothing exists except atoms and empty space, all else is opinion. — Democritus

Friction is a drag.

30 ml of prevention is worth 0.454 kg of cure.

If you only do experiments that you know will work, you aren't doing research.

New solutions generate new problems.

A jug of wine, a loaf of bread, and fifty thou ...



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