Newman urges tomorrow's writers to 'make facts dance'

MICHELLE LENNOX
News Writer

Students, professors and members of the wider Edmonton community gathered in the Telus Convention Centre last Friday to hear a lecture from legendary Canadian journalist Peter C Newman.

Newman, a former editor at the *Toronto Star* and *Maclean's* magazine, was quick to show the audience his sense of humour. He opened his speech with a series of jokes, jabbing everything from the Avian Flu to Canadian politicians. However, his focus quickly shifted to more serious current issues, ranging from the War on Iraq to Canada's involvement in Afghanistan.

From there, Newman turned to the key point of his discussion: the emergence of a new style of writing in Canada, often referred to as creative non-fiction. This new journalistic writing style places a creative twist on non-fiction that makes it more appealing to the reader—a method that Newman contends is increasingly necessary in today's hectic society.

"[Today] you have to give [the readers] more than facts. You have to entertain people … tell them stories, convince them to spend their time with you," he explained. "To do this, you have to make the facts dance … endow them with feeling."

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>
> **PETER NEWMAN**

Writing from your gut, knowing who your audience is, finding a unique voice and incorporating cadence were just a few of his suggestions as to how to accomplish effective creative non-fiction. But according to Newman, the most important element for a writer to incorporate is authenticity.

"You have to be authentic," Newman stated. "Truth is too big of a concept, but authenticity you can provide."

Newman stressed that these elements were important to all forms of writing.

"All this applies to journalism, to thesises, to short stories … to everything we do. [It applies to] writing," he said.

Newman then turned to politics briefly. He argued that the future is in Canada's hands and urged Canadians to be adaptable as the world changes around them. Finally, he spoke of the importance of appreciating our country.

"Too many Canadians take Canada for granted. We've got to get excited about our own country," he said, "The way to do that is to see it and to touch it. Get to know this country. Experience the sunsets, wade across the rivers, climb the mountains, sail the lakes."

The lecture, "Canadian Politics and the New Journalism: Making Facts Dance," was the first of this year's Mel Hurtig Lectures on the Future of Canada, co-sponsored by the Mel Hurtig Fund and the University of Alberta's Political Science Department.

Photon computers a bright idea

Researchers hope to shine a spotlight on new technology, which one day may be used to design and build faster, more efficient computers that run on light

SEAN MCCLURE
News Writer

With no mass and all energy, photons, the particles of which light is composed, are the fastest things around, travelling 168 000 miles each second. They're able to carry massive amounts of information across huge distances, racing through cables made of glass.

In the future, our personal computers may use photons to process and move information at impressive speeds.

The concept of a computer that runs on light is often called an "all-optical computer," and the advantages over today's electronic systems could be significant.

Mark Summers, an electrical and computer engineering graduate student at the University of Alberta, is working in a field called photonics; the technology concerned with the moving and storing of information using light. His work could one day lead to computers that run on photons, replacing the electrons that today's computers depend on.

"The photon can be thought of as an ideal information carrier, superior to the electron in terms of transmitting data." Summers said. "In optics, you overcome the problems associated with heat dissipation, and you can fit a lot more information at particular wavelengths in the same amount of space."

Performance in today's electronic computers is pushed to higher limits by cramming as many components as possible onto a microchip. The more pieces you can get on a chip the more operations you can perform every second. Electrons, however, like their personal space, and if this space is compromised they begin fighting for territory making things too hot and causing circuits to fail. Photons, on the other hand, don't mind each others' company.

Still, getting a computer to run on photons would be a little trickier than simply shooting flashes of light down a tube. The light must be controlled the way today's computers control electricity.

Inside your personal computer are miniature on/off switches, called transistors, that control the flow of electrons by only allowing those with certain energies to move. The other energies fall into a "gap" and aren't allowed to pass through to other areas of the machine.

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Just as humans use a sequence of sounds to communicate with one another, transistors use a sequence of ones and zeros: "on" represented by one and "off" represented by zero. A bunch of these devices "talking" to one another is what allows a computer to be able to generate a picture or spell-check an essay for you.

A key step towards making a computer that runs on light, then, will be developing a material that has a gap for photons instead of electrons. In nature, highly ordered patterns in the translucent wings of certain insects cause parts of the sun's white light to be filtered out. The remaining energies are scattered back to our eyes, which we see as a display of vibrant colours.

Summers is fabricating what are known as photonic crystals. These structures are also highly ordered and possess a gap where certain energies of light are unable to propagate through the material.

Using a process called Glancing Angle Deposition (GLAD), Summers fashions these materials out of silicon. The technique uses a beam of high-energy electrons to transfer silicon atoms to a flat surface at an oblique angle, forming a highly ordered structure.

"The process grows isolated columns which look like a field of grass," Summers said. "We use complex computer-controlled substrate motion algorithms to nano-engineer a complicated three-dimensional architecture inside the columnar film," Summers said.

In other words, a fair amount of theory and computation would be needed to get the final structure just right.

Summers also believes that if an all-optical computer is possible, it will be realized in three separate stages.

"The first stage will involve integrating optical interconnects between the various chips inside a computer increasing the bandwidth between the devices. The next stage is to integrate microelectronic circuits with microphotonic circuits, and the final stage will be everything optical, all the way to the human interface," he explained.

In the near future, photonic crystals will most likely be used for simple applications such as frequency filters or light-directing devices. However, an all-optical computer is the ultimate dream for many. Only time will tell if the idea remains solely in the realm of imagination, or eventually finds itself in the hands of everyday users.