

Opinion

OOOPS!

By TOM MITCHELL

Ottawa - Did you get through 1987 without an accident? If you did, you weren't quite as lucky as a lottery jackpot winner but you were more fortunate than about 3.8 million of your fellow Canadians.

If you were among the one in every five people age 15 and over who had an accident in 1987, Statistics Canada figures show it is most likely that it happened either while you were in a motor vehicle, while playing at a sport or while you were at work.

Over all, the figures from a special survey demonstrate that men had a higher accident rate than women. The highest probability of being an accident victim went to young men age 15 to 24 - at 27 per cent compared with 19 per cent for the total adult population. Persons who drank alcohol on a regular basis had higher rates than those who didn't for every type of accident except those which happened in the home.

A reportable accident was defined as one which interrupted normal activity for at least half a day or brought about expenses of at least \$200.

A full third of all such accidents were in the motor vehicle/traffic category. Accidents during sports or leisure activity were second at 23 per cent and work-related accidents next at 21 per cent. Mishaps in and around the home accounted for 13 per cent.

A review of accidental death in Canada for the years from 1926 to 1985 concluded that, in absolute terms, there was only a small net increase in accident mortality. But the relative importance of accidents as a cause of death increased through the years and the importance of other causes of death diminished, probably due in part to medical advances against diseases. Vital statistics figures show that 13,000 persons 15 and over died as a result of accidents in 1987.

The survey found a definite link between accidents and alcohol. As well, accident prevalence rose with the amount of alcohol normally consumed.

Only 27 per cent of non-drinkers had an accident in the three years ending in January 1988. This rate of accident involvement rose to 40 per cent for those who had one to six drinks a week, to 51 per cent for those who had seven to 13 drinks a week and to 56 per cent for those who had 14 or more drinks a week. A drink was defined as one bottle of beer, one small glass of wine or 1.5 ounces of liquor.

In accidents where injury resulted, bruises were the most common injury by far - occurring in 43 per cent of all cases. Cuts or scrapes occurred in 17 per cent of accidental injury cases and broken bones in 11 per cent.

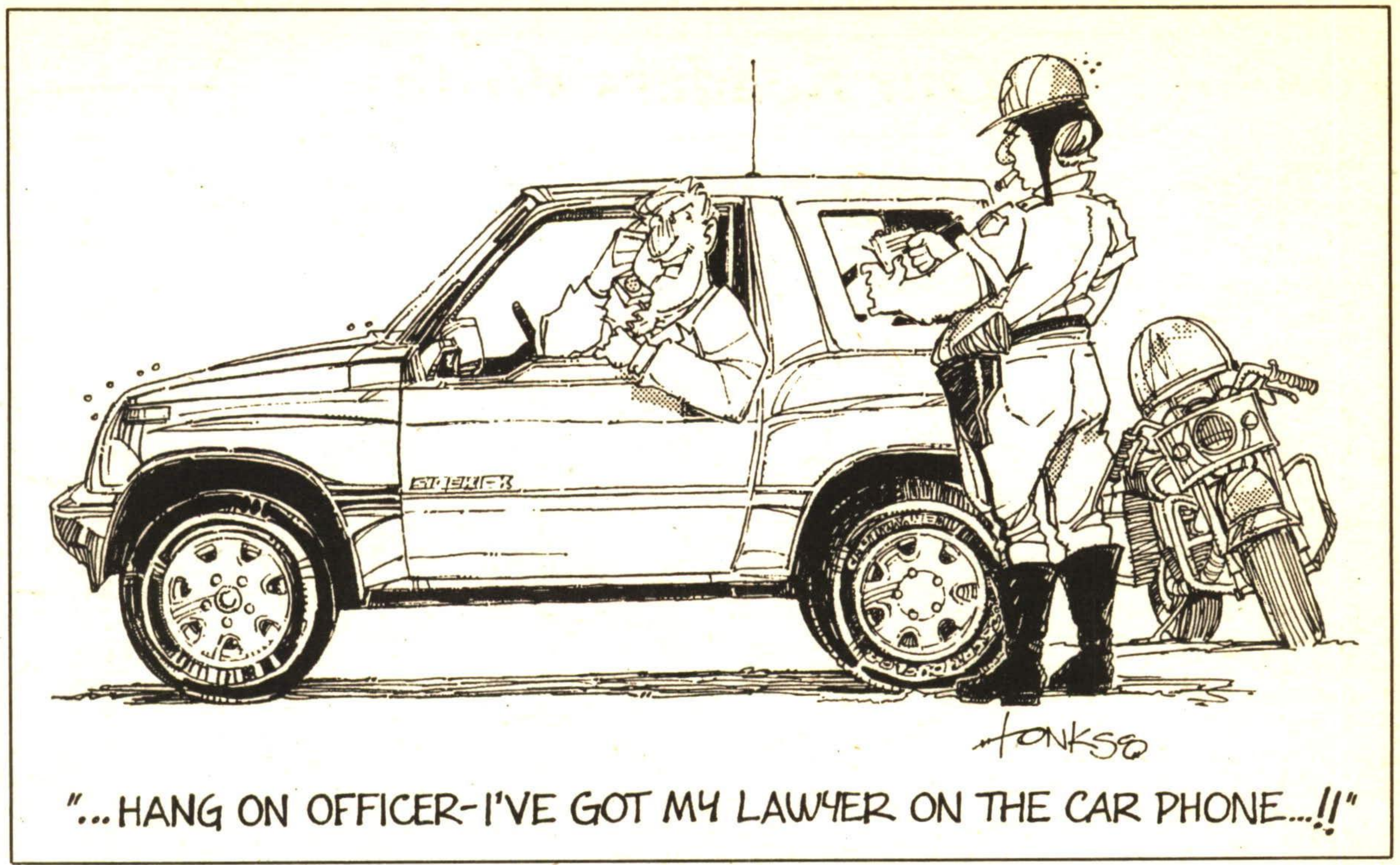
Motor vehicle accidents were responsible for 37 per cent of all reported head injuries. Sports were involved in just under

On the move

Make a graph of Canada's international travel account and it looks like a radical punker's hairdo - sharp upward spikes for our receipts during the summer months, deep valleys for the cash outflow during the winter. When the swings have been evened out, Canada has generally wound up with a deficit. But current trends show the peaks have been eroding and the valleys have been getting deeper. Here are some facts from Statistics Canada's latest ledger on the balance of travel payments.

All told during 1990, Canadians spent a hefty \$4.5 billion more travelling to other countries than visitors to Canada spent here, Statistics Canada figures show. This deficit on the balance of travel payments was up from a loss of \$3.5 billion in 1989.

Total Canadian spending for travel in other countries in 1990 was just under \$12 billion, up from \$10.7 billion a year earlier, according to Statistics Canada figures. Visitors to Canada from all other countries spent only \$7.4 billion here, creating a \$4.5 billion shortfall.



Cancer Society reports oncogene research holds exciting promise

In the early days, cancer researchers were faced with the complex puzzle of trying to figure out what cancer is and what causes it. And while there have been many significant milestones in cancer research along the road, it has only been within the last 15 years that tremendous advances have been made towards understanding the cancer process—of the mechanism that causes a normal cell to become a cancer cell growing wildly out of control.

One of the newest focuses in cancer research that has shed light on the cancer puzzle is the field of oncogenes. And one of the foremost cancer researchers studying oncogenes in Canada, Dr. Tony Pawson, says research in this area will "eventually result in a greatly improved ability to diagnose and cure cancers."

Pawson's research is funded by the National Cancer Institute of Canada (NCIC), the research affiliate of the Canadian Cancer Society, which will spend \$32 million on cancer research projects in Canada this year. Since 1981, Pawson has been awarded more than \$1.2 million in NCIC grants to study oncogenes and he is currently a Terry Fox Cancer Research Scientist at NCIC.

For more than a decade, Pawson and other researchers have known that oncogenes—or more precisely, proto-oncogenes—are found in every cell of the human body.

According to Pawson, a senior scientist at the Molecular and Developmental Biology Division at Toronto's Mount Sinai Hospital and a noted international authority on oncogene research, "People find it difficult to understand why we have these genes in the first place. But obviously, if we have them, they must be doing something important, and that turns

out to be the case."

When in their normal state proto-oncogenes are the blueprints for the proteins that regulate the way cells naturally grow and divide.

Most of the time, proto-oncogenes don't cause any problems. But if they become mutated for some reason—by radiation, the carcinogens in cigarette smoke, even certain viruses—they can become active oncogenes. Mutated oncogenes cause the cell to replicate faster and faster, without stopping. This process is the very definition of cancer: uncontrolled growth of abnormal cells.

But oncogenes, of which about 100 have been identified, are only part of the story. Counterbalancing the action of these cell growth promoters are the more recently discovered tumor suppressor genes, or anti-oncogenes, about which less is known. While oncogenes produce proteins that encourage cell growth, anti-oncogenes carry the code for growth-slowing proteins.

When an anti-oncogene stops working for some reason, or if it is missing from a cell, the cell won't produce any growth suppressing protein. Consequently, cell growth will become more rapid, cancer-style.

Pawson uses the analogy of an automobile to demonstrate how these two types of genes work, likening proto-oncogenes to the brakes. He says, "Cancer cells are like a car with its accelerator stuck and its brake line cut. It keeps going faster and faster, with nothing to stop it."

Although any cell could potentially become cancerous, Pawson points out that humans are fairly well guarded against such a development. Otherwise none of us would live to old age without developing tumors.

"Normal cells don't turn into

cancer cells overnight as the result of mutations in a single gene," explains Pawson. "It requires a succession of mutations of different proto-oncogenes and tumor suppressor genes before a malignant tumor can begin to develop."

Complex as these mechanisms may be, cancer researchers such as Pawson are studying the way oncogenes—and the proteins they produce—behave so that their action can be blocked.

Last year, Pawson and his NCIC team made an exciting discovery in this area when they identified a common element in many oncogene-produced proteins. Says Pawson, "We looked for similarities in the proteins produced by oncogenes and discovered there way a large class of proteins that basically act in the same way. Many human tumors have oncogene-produced proteins belonging to this class."

This discovery means that instead of having to study how many different oncogene-produced proteins work, researchers can concentrate on the one thing this class of proteins has in common which allows them to interact with one another.

"We have in hand most of the players now (oncogenes and their proteins), and we know that these proteins have been casually linked to a number of kinds of cancer," says Pawson. "Now we are trying to figure out how these proteins actually work and how to prevent them from making cells cancerous."

Pawson's team and other research teams across Canada and around the world are now searching for methods of blocking the action of oncogene proteins, with the hope of eventually being able to apply their findings to cancer research.

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