

## The Air We Breathe

You probably remember seeing a scene from a Sherlock Holmes play or movie eerily wrapped in London fog. We know today that the thick, grey smoke that swirled ominously around the lamp-posts in the nineteenth century wasn't just fog. It was air pollution at its worst. Black smoke hung over the city, created by dust from the low-grade coal used for heating in the crowded residential districts.

The fog eventually disappeared. Over time Londoners used cleaner coal and replaced coal with oil, electricity, and gas. London's last famous "killer fog" took place in 1962.<sup>1</sup> But our children's texts would make you think that those days are still with us.

- ◆ "In the London 'smog' of 1952, more than 4000 people died in the combination of smoke and fog that was trapped in the city. Los Angeles, located in a valley and with one of the highest concentrations of automobiles, is also prone to smog," concludes one science text.<sup>2</sup>
- ◆ "In earlier centuries, man added only slightly to the natural pollution of the atmosphere. Today, one very large industrial country

may add more than 150,000,000 tonnes of gases, smoke, and dust to the atmosphere each year,” says the text *Focus on Science*.<sup>3</sup> (The text does not mention that there are an estimated 1 million metric tonnes of atmosphere for every person on the earth.)<sup>4</sup>

- ◆ “Air pollutants are a serious menace to health. They are thought to be a factor in causing many respiratory diseases. Such diseases include pneumonia, bronchitis, emphysema, tuberculosis, and lung cancer,” says *Earth Science*.<sup>5</sup>
- ◆ Air pollution “may well pose the greatest danger of all . . . There is the growing fear worldwide that unless the harm is stopped, we may eventually destroy all life on our planet,”<sup>6</sup> says Edward F. Dolan in his book *Our Poisoned Sky*.

According to our children’s books, the chief culprit in producing air pollution is the automobile.

- ◆ The text *Focus on Science* says that “man-made pollution has become a major problem only in this century. To understand how this has happened, we have only to look at the increasing numbers of motorized vehicles.”<sup>7</sup>
- ◆ “Our cars emit many toxic substances, including large amounts of carbon monoxide, which interfere with the blood’s ability to absorb oxygen, which in turn may threaten the growth and mental development of unborn babies,” says *This Planet Is Mine*.<sup>8</sup>

### **But the Air Is Cleaner**

Air pollution used to be a serious problem in parts of urban North America. Today, although a few cities such as Los Angeles and Den-

ver still have serious smog, Canadians live in a pleasant atmosphere where smog is a rare occurrence, as do most Americans. Air quality has improved dramatically. Automakers have reduced emissions of pollutants; our homes mostly use natural gas and electricity, not coal; and industries have reduced the particulates from their smokestacks.

The Fraser Institute has reported on the change in airborne levels of pollutants between 1975 and 1994. As the following table indicates, lead went down by 97.0 percent, carbon monoxide by 73.3 percent, nitrogen oxide by 41.9 percent, and sulfur dioxide by 61.5 percent.

### Air Pollution Is Decreasing Nationally

	Percent Reduction	Period
<b>Total Suspended Particulates</b>	-46.2%	1980-1993
<b>Lead</b>	-97.0%	1974-1994
<b>Carbon Monoxide</b>	-73.3%	1975-1994
<b>Ozone</b>	+31.3%	1979-1994
<b>Nitrogen Oxide</b>	-41.9%	1977-1994
<b>Sulfur Dioxide</b>	-61.5%	1974-1994

Source: Steven Hayward and Laura Jones, *Environmental Indicators for North America and the United Kingdom*. 1999 Fraser Institute Critical Issues Bulletin (April).

### Air Pollution: How Dangerous?

Does this mean that there is no air pollution problem? No. There can be real effects on human health, especially on people who are already sick.

- ◆ In 1993, *Scientific American* cited two studies of Californians showing that people living in polluted areas have higher levels of chronic diseases, including bronchitis and asthma.<sup>9</sup>

- ◆ Researchers from the Harvard School of Public Health found that in several cities increases in very small particles in the air may be linked to an increase in the number of deaths over the next few days. This correlation was found even though the total particulates (that is, the portion of the air comprised of particles) were well within federal standards.<sup>10</sup>

Given these facts, it is important to keep improving air quality. But our children's textbooks are not very helpful about how to do it.

### **Automobiles: The Enemy**

The textbooks treat the automobile as the enemy in the war against pollution. They urge children to ride bikes, join car pools, or use mass transit. We, the authors of this book, have seen the results.

Devin (Michael's eight-year-old son) was driving with his father one day. He noticed that many cars had only one person. By using cars so wastefully, he said, people were making pollution much worse. Then a bus stopped nearby. Michael asked Devin to count the number of people in the bus. It was just a handful. As he finished counting, the bus suddenly took off in a cloud of black smoke. Devin had to agree that cars may well be causing less pollution per person than buses.

Such a "reality check" is not found in the books our children are reading. The book *Earthcycles and Ecosystems*, published by the Kids Can Press in Toronto, is especially pointed about cars.

- ◆ "There are about 400 million cars in use today around the world."
- ◆ "You can smell (and often see) the pollution that gushes out of car tailpipes."

- ◆ “They’re the main source of pollution in the cities . . . Automobile pollution is so bad in some cities that cars have been banned!”
- ◆ “They release carbon monoxide . . . too much of it can make it difficult for people to breathe or can even kill them.”
- ◆ “Car pollution doesn’t stop when a car dies and gets hauled off to a junkyard. Rusting car bodies clutter the landscape, and piles of used tires can turn into an environmental disaster. On February 12, 1990, 13 million used tires caught fire and burned for 17 days at a tire depot near Hagersville, Ontario. Oil and dangerous compounds melted from the tires and seeped into the land and groundwater below, causing serious contamination.”
- ◆ “How can you reduce car pollution? Try using muscle power instead of horsepower: walk, jog, cycle, or skate . . .”<sup>11</sup>

Certainly riding bikes and car pooling are good ideas. But children should learn the other side of the story.

- ◆ Today’s new cars emit 96 percent fewer hydrocarbon tailpipe emissions (that is, pollutants) than models of the early 1970s.<sup>12</sup>
- ◆ Most auto pollution is caused by a very small fraction of cars. Fewer than 10 percent of all cars are responsible for more than 50 percent of total auto pollution.<sup>13</sup>
- ◆ The private automobile provides enormous benefits. It enables millions of people to go where they want to go, when they want to go, and it moves them from door to door—benefits that are especially important for parents with young children.

To address air pollution effectively, it is necessary to focus on real pollution sources. Probably the biggest is poorly tuned vehicles. Luckily, the technology for such an approach already exists. Donald Stedman, a University of Denver chemistry professor, has developed a device that uses an infrared beam of light to measure pollutant emissions from vehicles as they drive by on the road or highway.<sup>14</sup>

The device can be fitted with a camera to record license plates. Stedman's invention, which is being used experimentally in about 30 places around the world, could identify the real polluters at considerably less cost than mandatory emissions programs and other regulatory schemes.

So far, this idea has been ignored in the textbooks.

### **Talking to Your Children**

Air pollution is a serious issue. For hundreds of years, air pollution has been recognized as aesthetically unpleasant and dangerous to health. But air pollution has been declining over the decades. In most parts of the country, the air is clean most of the time. Children should be taught this side of the story, too.

Now you can answer your children's questions.

- ◆ Is the air getting cleaner?

Yes. According to Environment Canada and Organisation for Economic Cooperation and Development (OECD) data, all the major air pollutants except ozone declined from 1975 to 1997. That progress is continuing.

- ◆ Is air pollution dangerous?

Yes, it can be. Severe air pollution is harmful to people's health, especially those with asthma or other lung diseases. But the air today is much cleaner than it used to be.

### **Activities for Parents and Children**

The following activities will help you and your children put today's air pollution problems into perspective.

#### ***Remembering the Good Old Days***

Most of us, including our children, have a nostalgic view of the past. We imagine the nineteenth century as resembling prints of horse-drawn sleighs traversing a snow-covered country roads. But life before the automobile was anything but pristine.

When your children raise concerns about the air pollution created by cars, ask them if they would rather live in a world with "clean, nonpolluting" horses instead of polluting cars. Most children will jump at the chance. Sit down with your children and add to their list of household chores feeding the horse twice a day and cleaning the stall or corral. (Few children realize that horses create forty pounds of manure per day and that this "pollution" must be disposed of.)

Or, take your children to visit a local stable. Have the owner or manager show your children the stalls and what it means to "muck out a stall." Ask the owner to tell your children how much waste is produced by the horses and how the people who work at the stable get rid of it. Then ask your children to imagine every car on your block replaced by a horse. What would the street be like? How would it smell?

#### ***A Tale of Two Cities***

Show your children the photographs of False Creek, Vancouver, British Columbia on page 167. These photographs were taken from the same location 72 years apart. In the early part of the century, many

**False Creek, Vancouver, British Columbia in 1926 (top),  
and in 1998 (bottom)**



Credits: The Vancouver Public Library; reproduced by permission (top);  
Liv Fredricksen (bottom)

workers lived in close proximity to the mills, and the mills spewed pollution. Today, we have different land-use priorities.

Ask your children which city they would like to live in. Most will pick the picture of the clean Vancouver. Ask them if the people who lived in the dirty Vancouver liked living there. If not, ask your children why they think people lived there.

The reason, of course, was that jobs were available, and back then people needed jobs more than clean air. But gradually, changes took place in Vancouver's industrial and business economy. Today, the people of Vancouver have clean air and good jobs as well.

### ***A Matter of Prosperity***

While many factors contributed to Vancouver's cleaner air, one important factor that is often forgotten is the increase in the wealth of its citizens. The following chart shows income per person in 1926 and 1996 (adjusted for inflation). The average income was nearly four and a half times as high as in 1926 as it was in 1926.

#### **Canadian Income per Capita (GDP, in constant 1986 dollars)**

<b>1926</b>	<b>1996</b>
\$4,654	\$20,618
Sources: Statistics Canada, <i>Canadian Economic Observer Historical Statistical Supplement 1995/96</i> , Cat. #11-210; <i>Canadian Economic Observer</i> , Dec. 1997, Cat. #11-010.	

In the early part of this century, Canada was much poorer than it is today. People were more concerned with making a living than having a clean environment. Today, however, because we have greater wealth than we had then, we are better able to clean the environment.

Many Third World cities are polluted today. As they become wealthier, they, too, will take additional steps to protect their environment. As people become more affluent, they will insist on less

pollution, and they will be willing to spend money—sometimes through their taxes—to help clean the air.

## Notes

- 1 Derek M. Elsom, “Atmospheric Pollution in the United Kingdom,” in *The State of Humanity*, ed. by Julian L. Simon (Cambridge, MA: Blackwell, 1995), 476–490 at 478.
- 2 Douglas Gough and Frank J. Flanagan, *Focus on Science: Exploring the Natural World* (Toronto, ON: D.C. Heath Canada, 1980), 356.
- 3 Gough and Flanagan, 356.
- 4 Russell Seitz, “A War Against Fire: The Uses of ‘Global Warming,’” *National Interest*, Summer 1990, 55.
- 5 Samuel N. Namowitz and Nancy E. Spaulding, *Earth Science* (Toronto: D.C. Heath, Canada, Canadian ed., 1987), 497.
- 6 Edward F. Dolan, *Our Poisoned Sky* (New York: Dutton, 1991), 4.
- 7 Gough and Flanagan, 354.
- 8 Mary Metzger and Cinthya P. Wittacker, *This Planet Is Mine: Teaching Environmental Awareness and Appreciation to Children* (New York: Fireside, 1991), 18.
- 9 James M. Lents and William J. Kelly, “Clearing the Air in Los Angeles,” *Scientific American* (October 1993), 38.
- 10 Philip J. Hilts, *New York Times*, July 19, 1993, 1.
- 11 Beth Savan, *Earthcycles and Ecosystems* (Toronto: Kids Can Press, 1991), 43.
- 12 J. G. Calvert *et al.*, “Achieving Acceptable Air Quality: Some Reflections on Controlling Vehicle Emissions,” *Science*, July 2, 1993, 37–45.
- 13 Rick Henderson, “Dirty Driving,” *Policy Review*, Spring 1992, 56–60 at 57.
- 14 Henderson, 56–60.