

Harry Kroto

20 DECEMBER 2002

The lack of toys that encourage our kids to develop good hand-eye coordination or to understand how things work might help explain why our railways are in such a parlous state

It's the season of goodwill - that makes a nice change since the rest of 2002 has been a season of ill-will, or so it seems as we gape in abject disbelief at the machinations of our politicians and other assorted riffraff.

Not being subservient to any mystic ideology, for me it's really only the season of giving presents, and nothing gives me more pleasure than to give my friends (and occasionally my enemies) books. I often buy a dozen copies of a book I like and give them away, hoping they will be appreciated, or not, depending on my whim. One such book is Alan Mackay's *Dictionary of Scientific Quotations*, which contains a favourite quotation: "An intellectual is a parasite who exudes culture" (it could equally be applied to columnists) and another is Carl Sagan's *The Demon-Haunted World*.

Presents are a favourite with children and most adults consider carefully what they should be given. As a child, I tended to get presents at Christmas and Chanukah. You may think I was lucky getting two lots and, by and large, I was. However, on one occasion when I broke the present the moment I got it, it was promptly taken away and I got it back, repaired, the following year. Another time, when I came 31st out of 33 in French, I got a French dictionary. The only thing that taught me was how to get a free dictionary.

One year I saw a Hornby 0-gauge engine in a pawnshop, and wanted it desperately. I watched, my nose glued to the shop window, as my father bargained the price down from six quid to four quid and was told I would get it if I came in the top three in my class. I think I mentioned this to my teacher and, curiously, came third that term. Was it good luck or did my teacher juggle things a bit?

If only children got as excited over such presents now. I think one reason for the drop in the uptake of science and engineering by teenagers is that so few children today get toys that unleash their creativity or develop manual skills. They do not get chemistry or woodwork sets any more. It is great that many get Lego, but they need something that goes beyond the building-block concept. They need toys that develop manual dexterity and an understanding of engineering principles, things that I learnt by playing with the Meccano set I received one year.

I am sure it was a crucial element in my development and it cannot be a coincidence that nearly 100 per cent of older scientists and engineers had Meccano as children. Aligning nuts and bolts and tightening them without tearing the thread is a delicate art, requiring good hand-eye coordination and an awareness of the subtle differences between materials such as steel, brass and aluminium. Have you ever been to your bathroom after a party to find the tap so tightly shut that you cannot open it? You know the last person never had Meccano. Do you remember the time you tried to change a tyre and could hardly undo the wheel nuts - the guy who tightened them with a hydraulic tool set so only the Terminator could undo them did not have Meccano either.

The problem, and I do not have the answer, is how to get kids hooked on toys that demand perseverance and develop manipulative skills in this era of (violent) computer games, Walkmen and other instant gratification devices.

We learn how things work by fixing them. In the old days when the family radio broke down it was likely to be because of a faulty valve. You looked for the valve that was not lit and replaced it. That miracle of modern technology, the digital watch, with its liquid crystal display, tiny battery and microprocessor, cannot be repaired. The old clocks could be repaired, and kids could see roughly how they worked by opening up the back.

We are now disconnected from an understanding of how much of our world works. Some may say that this does not matter, but I am not so sure. My guess is that if we do not know how the technologies on which we depend work, we are likely to make more mistakes than if we do know. When so few of today's engineers had electric trains or constructional toys as kids, should we really be surprised that our trains break down, our tracks are crumbling and half the pathetic number of escalators on the London Underground have broken down?

Mr Prescott, I suggest that this Christmas you buy the big boys and girls who run our railways some model railway sets, and only when they have managed to get toy trains to run without jumping toy tracks, let them loose on big trains and real tracks.

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