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## Personally Speaking

by Rupert Sheldrake

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Why are schoolchildren still told to write up their science in the passive, as though the experiments happen of their own accord, asks Rupert Sheldrake.

"The test tube was carefully smelt." I was astonished to read this sentence in my 11-year-old son's science notebook. At primary school his science reports had been lively and vivid. But when he moved to secondary school they became stilted and passive. This was no accident. His teachers told him to write this way.

When I was at school, my science teachers made me write in the passive voice, but I had no idea it was still going on. Ever since I was a graduate student at Cambridge, I have thought the active voice--"I did"--far more appropriate in scientific writing than the passive--"it was done". Experiments do not mysteriously unfold in front of impersonal observers. People do science, and to portray it as a human activity is not to diminish it but to show it as it is.

The passive style is not only misleading, it is also alienating. A young medical student told me "it felt strange at first" when a lecturer asked her to write her reports in the active. "But then it felt liberating," she said. "Suddenly I could be myself again, after years pretending I wasn't there."

Recently I asked Frank Chennell, the co-ordinator of the Norfolk Teacher-Scientist Network (TSN), if he could find out how local teachers and scientists thought children should write science reports. Most teachers agreed that, in line with the national curriculum, younger children should adopt a direct style. But some believed that older pupils should use the passive. Most local scientists favoured the passive for research papers.

When Lord May, the president of the Royal Society, read the results of this survey in the TSN newsletter, he said he was "horrified" that the Norfolk scientists favoured the passive. "I would put my own view so strongly as to say that, these days, the use of the passive voice in a research paper is the hallmark of second-rate work," he says. "In the long run, more authority is conferred by the direct approach than by the pedantic pretence that some impersonal force is performing the research."

I soon found that May's strong views are shared by many other eminent scientists, including the Astronomer Royal, Sir Martin Rees. Bruce Alberts, president of the US National Academy of Sciences, has said he strongly favours the active voice.

Most scientific journals accept papers in the active voice and some, including Nature, positively encourage it. When I surveyed the current issues of 55 journals in the physical and biological sciences I found only two that still required contributors to use the passive.

As far as I can tell, the passive style didn't become fashionable in science until the end of the 19th century. It was meant to make science seem more objective, impersonal and professional. Before that, scientists generally used the active voice. Isaac Newton and Charles Darwin certainly did. The heyday of the passive in scientific literature was the half-century from 1920 to 1970. But while leading scientists have abandoned this convention, many science teachers still insist on it.

To find out more, I contacted the heads of science in 262 secondary schools: 212 state-maintained schools in Devon, Greater London (Camden, Ealing and neighbouring boroughs), Greater Manchester (Rochdale and Bury) and Nottinghamshire, and a random sample of 50 independent schools. I received replies from 172 of them. Overall, 45 per cent of the schools said they encouraged the use of the active voice, while 42 per cent said they encouraged the passive. The remaining 13 per cent had no preference.

There was a significant difference between state-maintained and independent schools: 58 per cent of the independent schools I surveyed encouraged the use of the passive, compared with 37 per cent of state schools. Geographically, the proportion of passive-inclined state schools ranged from 30 per cent in Devon to 41 per cent in London and Greater Manchester. Some of those teachers who taught using the active were enthusiastic advocates. Others said they used the active voice out of necessity, and one head of science in an inner-city comprehensive commented: "We're lucky to get them to write anything at all. It would be difficult to persuade students to write in a style so very different from normal speech." He implied that more state schools would use the passive if they could.

Other teachers promote the passive because they think examination boards require it. There is some truth in this. Of the three examination boards for England, two encourage the use of the passive for sixth form exams. The Qualifications and Curriculum Authority (QCA), the government's guardian of educational standards in England, has no official position on the matter.

Most of the teachers who encourage the passive voice say they are simply following convention. Clearly, they believe that leading

scientists and journals still prefer it to the active. This is an outdated view. "Primary and secondary teachers should, without any reservation, be encouraging all their students to be writing in the active voice," says May. What would happen if the Royal Society officially endorsed the use of the active voice? Perhaps the QCA and the examination boards would follow suit. Then hundreds of thousands of science students could stop pretending that they were not really there during their experiments.

Science teachers in my survey who supported the active say it is "more natural". It "gives pupils ownership of their work" and "makes science more personal and pupils more involved". I agree. I believe the passive voice is alienating. It mystifies scientific practice and is ugly and cumbersome. The active is better at communicating what scientists actually do. Above all, it is more truthful.

Rupert Sheldake is a biologist and author