

Nothing but the truth

No matter how extreme activists get, scientists must resist the temptation to go beyond the facts, warns **Robert Matthews**

ON ISSUES from genetically modified crops to climate change, scientists are confronted by critics seemingly willing to say or do anything to win the debate. Faced with such opposition, it can be tempting to push facts harder than they can bear, simply to get a hearing.

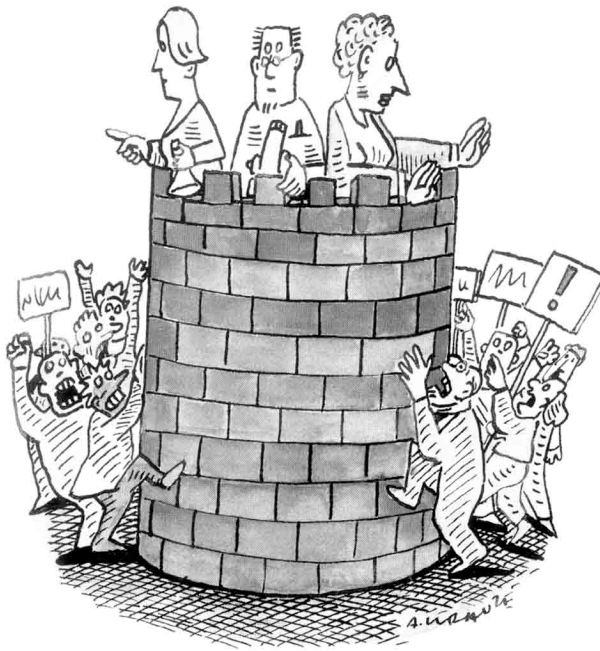
This temptation has long worried some of the scientists at the sharp end of such controversies. When the issue of global warming first made headlines in the late 1980s, the influential climate researcher Stephen Schneider expressed the hope that scientists could strike a balance “between being effective and being honest”.

Yet such hope seems increasingly forlorn in one such controversy: the justifiability of animal experiments. Provoked by opponents prepared to use everything from celebrity endorsement to lethal force, the science community has begun sliding down a slippery slope – making assertions that lack any basis in fact.

Let's be clear: animal experiments have undoubtedly been important in many areas of medicine, from immunology to surgery. Concern over the public's lack of appreciation of this fact prompted many eminent researchers, including six Nobel prizewinners, to sign a declaration in 1990 stating that animal experiments have made “an important contribution” to medical science and surgery.

Since then, attitudes on both sides have hardened. The protests have grown more strident – and so have the pronouncements of scientists. Those same eminent researchers and even the Royal Society have taken to making a far stronger statement about the value of animal experiments: that “virtually every medical achievement of the last century has depended directly or indirectly [on research involving animals]”.

This is certainly an impressive rejoinder to critics of such research – but is it true? To find out, I traced the origins of the statement, and examined the evidence behind it. The results will



appear in this month's issue of the *Journal of the Royal Society of Medicine*, and they do nothing to engender trust in the scientific community.

The statement may have acquired the imprimatur of the UK's leading scientific academy, but it turns out that it does not originate there – or even in the refereed literature. The wording comes from an anonymous article in a newsletter circulated by the American Physiological Society in 1994, and attributed to the US Public Health Service. It contains not one reference to the scientific literature.

Long lists of breakthroughs attributed to animal research can indeed be found on the websites of pro-experimentation lobby groups, but they fall far short of representing “virtually every” medical achievement of the last century. This might sound churlish, but there's a point of principle here. The adoption of the statement by so many eminent scientists places a clear obligation on them to substantiate it with evidence. Their failure – and, in all probability, inability – to do so leaves

them open to a charge of abuse of intellectual authority.

More problematic still is the assertion that all these medical achievements “depended directly or indirectly” on animal experiments – that is, such experiments were not merely part of the discovery process, but provided invaluable weight of evidence. The distinction is crucial, given the widespread use of animals in medical research. Such use is mandatory in drug discovery, so every new wonder-drug involves the use of animals at some stage. But to claim this proves their value is as nonsensical as claiming that the wearing of lab coats proves their value in finding new cures.

The real question with animal experiments, then, is not their involvement in major breakthroughs, but whether they actually do any good. Astonishingly, that has never been formally established. Despite decades of research involving animals, there have been few systematic attempts to see how reliable the outcome really is.

Most attempts have been in the field of toxicity testing, and the results are far from encouraging. Few provide enough data to allow the value of animal studies to be worked out; those that do suggest they are no more informative than tossing a coin.

Does this prove that all animal research is useless? No – but it does show that assertions about the value of such research are unsupported by data. It also explains the lack of supporting references in the original 1994 statement: there weren't any to give. Yet its endorsement by so many authority figures has given it a wholly spurious level of scientific credibility – one that few non-scientists could easily dismiss.

The solution, of course, is to establish a systematic study of the real value of animal experiments to medical science. It will be expensive and time-consuming, and may not give the desired result. In the meantime, the scientific community should have the courage to ignore the hectoring of animal rights activists and state not what it hopes is true, but what it can prove to be true. To go beyond the facts is to risk that most precious commodity: intellectual integrity. ●

“The question of whether animal experiments do any good has never been established”

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