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Presidential Address 2002

Where is science taking society and where is society taking science?

M.W. FISHER

Pharming Hildagaard, a fringe theatre production telling of human cloning (Figure 1), is one way our society deals with the contentious nature of modern scientific developments. The fringe theatre production set at a fictitious research organisation in Hamilton, may have been a fantasy, sensationalist, and perhaps contained dodgy science (M. Servian, personal communication), but it was a story that attempted to engage the issues that cloning raises. While this may have been fringe or experimental theatre, opposition to genetic modification is more mainstream and “coming to a field near you”. Questions have been asked over where science is taking agriculture (Anon, 1998) and we might also ask where science is taking society, or where society is taking science? I want to use a number of great thinkers to reflect on how we deal with these questions, and thus how we deal socially with science.

Socrates and Scobie

The first great thinker is the Greek philosopher Socrates (470-399 BC) who broke the myth that we are all “puppets in the hands of the gods”. Socrates searched for truths by asking questions and challenging beliefs. While charismatic and full of ironic humour, the nature of his methods made him a disruptive and subversive influence exposing the ignorance of individuals in power and authority. He was arrested on charges of corrupting the young and chose to be executed rather than renounce his methods. Socrates gave Western civilisation a role for the legitimate doubter in a democracy (see Magee, 1998).

In asking “Who would be an animal producer?” in this Society’s newsletter, Scobie (2001) demonstrated the extent of Socrates’ legacy over 2000 years later. Unfortunately, some of the facts used to illustrate the question were wrong and in the tradition of Edwina Currie (the UK Minister of Agriculture who had to resign after questioning the safety of food produced by the poultry industry) rather than Socrates, the Society, rightly, published an apology (Scobie, 2002). But some of Scobie’s sentiments, the relationships and beliefs inherent in economics and animal production, were worthy of our further exploration and have since been the subject of the Livestock Improvement Corporation Lecture (McInerney, 2002). Without being drawn into Scobie’s comments, or the industry he questioned, it seems we are reticent to question our beliefs or even publicly celebrate different views. This approach, while protecting our current interests, might be detrimental in the long-term as beliefs and attitudes evolve.



FIGURE 1: The promotional flyer for *Pharming Hildagaard*, performed in New Zealand in 1988 (reproduced with permission)

Changing beliefs and times

Our beliefs have changed throughout history and will continue to do so in the future, and there are many fascinating examples (Fisher, 2002). For instance, it was once held that lightning was a supernatural phenomenon, which led to gunpowder being stored in churches to give it divine protection. Church bells were rung in thunderstorms and lightning strike killed bellringers! Another example was the inheritance of acquired characteristics, a once commonly held belief often associated with Jean Baptiste de Lamarck (1744-1829). Interestingly, despite the genetic paradigm now being widely held, there is evidence for the inheritance of some acquired characteristics (Margulis, 1998). It seems vital, then, given that

they change, that we investigate the beliefs commonly held in science and society - by encouraging doubt.

In dealing with contentious issues like global warming, the former President of this Society called for the promotion of science, public education, the manipulation of the media and the lobbying of management (Barrell, 2002). I suggest that those of us in the science community also need to reflect on our own beliefs and interests, as well as acknowledge and understand others different views. Indeed it has been suggested that animal scientists must not speak with one voice, but develop an ethos of open and active debate (Thompson, 1999), engendering trust without provoking public confusion.

Science and understanding the world

There are several ways or modes of understanding the world including through the physical and social sciences, through case histories and narratives, and through an understanding of what it means to be human (R. Downie, personal communication). And being human means balancing all our ways of knowing - common sense, ethics, imagination, intuition, memory and reason (Saul, 2001). Excessive dependence on reason alone results in our dehumanisation, a good citizen must be non-conforming, outspoken and disinterested (Saul, 1997). Within science, as well as society in general, we should, and do, encourage doubt. However, all too often participants are placed in the position of having to publicly defend their positions in polarised debates. Arguments should be improved before they are refuted, and dialogue and communication should emphasise shared meaning (Bohm, 1996). Perhaps we need a public forum whereby individuals, professional and public alike, can be encouraged, and if need be supported, to question and doubt, explore views and

arguments, acknowledge people's real concerns, and reflect on cultural stances and assumptions, without recourse to the need to represent their institutional or private positions. Only by acting truly for the sake of those who entrust us, as well as for personal and corporate motives, can society realise the benefits from science that are really wanted.

Greater use of things like the arts and science fiction (e.g., *Pharming Hildagaard*) might help us to question and raise doubts, acknowledge and address people's real concerns, and to think differently and reflect on our cultural assumptions and the way we see the world. In other words, to critique (rather than criticise) science from social and cultural perspectives, as well as scientific and economic viewpoints. If agricultural biotechnology such as cloning is good, the sooner we have open debate and dialogue the better. If it entails challenges to the environment, human health and social relationships, then it is best to consider these now rather than later (Priest, 2001). In short, the more socially equitable use of current scientific knowledge may be more important than the acquisition of more knowledge, requiring reference to interests and values beyond the domain of science (Chalmers, 1990).

To conclude, while Socrates died for his beliefs, Scobie is alive and well, though he may bring some risks of litigation to this Society. However, it is their quality of legitimate doubt, as well as the full range of qualities that make us human, which will ensure the correct place of science in both our Society and society in general. I encourage you to read Saul, talk to Scobie and embrace Socrates' attitude.

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