

New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website www.nzsap.org.nz

[View All Proceedings](#)

[Next Conference](#)

[Join NZSAP](#)

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](http://creativecommons.org/licenses/by-nc-nd/4.0/).



You are free to:

Share— copy and redistribute the material in any medium or format

Under the following terms:

Attribution — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for [commercial purposes](#).

NoDerivatives — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

<http://creativecommons.org.nz/licences/licences-explained/>

Presidential Address 2004

The changing face of animal science in Society

N.B. JOPSON

Abacus Biotech Ltd, P.O. Box 5585, Dunedin

It is a very interesting exercise to go back to the first few editions of our own proceedings and examine the areas of research that occupied the attentions of our members around 60 years ago. While the tools we use today are far superior to the techniques of their day, many of the questions asked have changed little over that time. Our research is still mostly related to how we can make better or more efficient use of our animal and land resources to produce a range of products to suit the markets of the day. However, what has changed significantly over that period is what society considers to be acceptable use of our animal and land resources.

The mining practices of the early gold mining period in Central Otago, where hundreds of hectares of land were washed away, would not receive approval today. Likewise, people's attitudes to the use of our hill and high country have changed radically over the last 150 years. Samuel Butler came to New Zealand to become a sheep farmer and wrote '*A First Year in Canterbury Settlement*' in 1863 to describe his experiences. In it, he described the grandeur and beauty of Mount Cook, but then concluded, "I am forgetting myself into admiring a mountain which is of no use for sheep. This is wrong. A mountain here is only beautiful if it has good grass on it. Scenery is not scenery – it is 'country', *subaudita voce* 'sheep'. If it is good for sheep, it is beautiful, magnificent, and all the rest of it; if not, it is not worth looking at." In becoming a sheep farmer in New Zealand, Butler saw no value in land if it could not profitably be used for agriculture. Today, the recreational value of the high country is probably equally as important as its agricultural value. In agriculture, as in every aspect of society, our shared values and attitudes determine what is deemed acceptable or unacceptable practice and behaviour (social norms).

Science is not immune from this process. The very factors that have resulted in changes in 'acceptable' land use and business practices have also had an impact on science. It may be too extreme to say that we face a public 'crisis in confidence' in science and research, but society's attitudes have certainly changed in regard to what is and what is not currently deemed acceptable as evidenced by the heated reaction to the GE debate and a range of other topics.

To give an example, Dr J. Watson (President of the Royal Society of New Zealand) encouraged attendees at a recent Royal Society Constituent Organisations meeting to use every opportunity to promote science, and included the following:

"As a scientist, I find one of the most distressing aspects of the recent heated public discourse about genetic engineering is what it says about our society. A visitor reading our papers and listening to news reports might easily think this is a society that neither understands nor values science, and has no clear view as to what its role might be in shaping the nation or solving its problems. We would seem to be given to the confrontations, grand gestures and the frequent repetition of strongly held views.

The values that we, as scientists, hold dear - investigation, evidence, and reasoned discussion - are seldom found throughout this discussion. Yet in small nations such as ours, finding a common foundation on which informed dialogue can be sustained is even more critical than it is in larger democracies."

Over the last 300 to 400 years, science has held a very favoured position in western society. Science has been seen as the means to progress and human betterment. As such, it has been almost universally admired and supported. It played a major role in Captain Cook's voyage to New Zealand. Captain Cook was sent to Tahiti to observe the transit of Venus so that the distance from the Earth to the Sun could be calculated, after which he set off to explore the South Pacific. So the question is, what has changed to bring a shift in society's attitude to science and what impact does it have on us as animal scientists?

Firstly, we as scientists are products of the age of enlightenment. The processes that we use to understand and interpret the world in science, and the way we are trained to think and analyse data date back to that period, albeit with some subsequent degree of refinement.

If we were to survey why people have chosen a career in science, there would be many similarities between the answers that were given. High on the list would be the idea that in understanding the world, we can use that knowledge to improve our lot. The belief that science would automatically lead to betterment of the human condition is characteristic of the period from the 17th to the 19th century. The notion that science, and the technology which it spawns, by definition produces only benefits is certainly no longer a widely held belief. There have been so many examples where this has not been the case. There is a general awareness that the costs for a particular piece of research must be weighed up against the benefits that it might bring. However, Schillo and Thompson (2003) suggest that, "Although many animal scientists might understand that science can have both beneficial and harmful effects, it appears

reasonable to assume that most animal scientists lack a sophisticated understanding of how this can be the case.”

The major reason given for this is that we as animal scientists fail to fully understand the beneficial and harmful effects because we do not fully acknowledge the political nature of science. It is an inescapable fact that science is by its very nature political. There is no doubt that there is considerable satisfaction that can be drawn from the knowledge that our research results in some form of improvement to our country. However, when there are a number of groups in our country all seeking solutions to problems, the question is how are the problems to be prioritised, especially when solving the problems for one group makes another group’s problems greater? Research is political in nature simply because of the fact someone has to make decisions about what research will be done, and those decisions are made from the political viewpoint of the person or group making those decisions, or to support the political priorities of the government of the day.

This can be illustrated by looking at trends in science funding in the United States of America over the last decade. Ten years ago, the total research spend was approximately split equally between public (i.e. government including defence) and private sector money. Over the last decade, there has been no increase in the total public money put into research, but the private sector investment in research has doubled to now comprise approximately two thirds of the total in 2003. Predictions are that this trend is unlikely to change significantly in the near future. Private sector research investment is understandably extremely targeted with very clear expectations about the outcomes of the research and who may benefit from the work. The remaining third of the investment into research which come from public sources is also allocated according to political will of the government of the day to achieve political goals.

In New Zealand, the situation is not dissimilar. Historically, increases in government investment in research have been relatively small, so any hope for a substantial lift in science investment is heavily reliant on an increase in private sector investment. Private investment is again very focused, and there was the example in 2004 where forty million dollars of research funds were withdrawn from Auckland University because Pharmac altered the subsidy on a product from the multinational pharma company funding the research. The Government money is also targeted at producing outcomes, with the possible exception of the Marsden Fund, of which the outcomes are essentially supporting the areas that will achieve political goals.

In fact, one could argue that research has always been political, it just appeared less so because we did not have the degree of differences in attitudes and beliefs within our Society that are present now. Agriculture used to be by far the largest sector in the New Zealand economy. While agriculture, horticulture, forestry and aquaculture still make up a major part of

export earning in New Zealand, the rationalisations over the last hundred or so years have meant that the number of people employed and directly reliant on agriculture has dropped dramatically. And this is true of probably every country across the developed nations. For example, in the United States of America at the start of the 20th century, 65% of people living in rural areas were involved in some way with farming. One hundred years later, that figure has dropped to 6.3%, with a mere 1.6% of the total population having direct involvement in farming (Schillo and Thompson 2003). In general, people are obviously still aware that agricultural production comes from the land, but the association between crops in the field and food in the supermarket has been broken, or at least largely diminished. Regarding animals, many do not want to associate the living animal with the meat that they eat.

Areas that have been used for farming for generations are seen by an increasingly large part of the population as areas for preservation, recreation and development as well as for farming. Rural lands have been transformed from the bread basket of the country and the driver of the economy to becoming in part an ‘essential component of urban society’. It is this view that drives the process of tenure review in the high country.

The question that arises is whether our culture currently values science? I think that most individuals do value science, but that many will only believe the results of research which supports their personal beliefs and attitudes. Science that goes against their view of the world can be discounted for any number of reasons, such as being of poor quality or asking the wrong questions. In essence, the beliefs and attitudes of the observer are influencing the interpretation of the results. The problem for us as scientists is that if beliefs influence the outcomes of research, how can we know what is the correct interpretation of experimental results.

So, when we are confronted with an issue like the GE debate, we need to remember that our largely urban population have little sympathy for issues of productivity or efficiency on the farm. What is important to the average consumer? They want healthy, attractive looking food at a good price. GE applications such as glyphosate-resistant plants do not address anything that the consumer perceives as being important. There is little appreciation of the fact that weeds and insects reduce yields, contaminate crops and influence prices. The benefits are perceived as being delivered to the farmer and not to the consumer.

This leads us to what is probably the crux of the issue. One of the central features of the Western world in our current age is the concept of pluralism. That is, the idea that all beliefs are equally valid, no beliefs are dominant in the culture at large, none are authoritative, and yet all are viable and can co-exist together. It can be applied in almost any context. UNESCO (2003) makes this comment on cultural pluralism; “In our increasingly diverse societies, it is essential that persons and groups having plural, varied and dynamic cultural

identities should live together in harmonious interaction and proper accord. Policies that seek the integration and participation of all citizens are an earnest of social cohesion, vitality of civil society and peace. Defined in this way, cultural pluralism is the policy offshoot of cultural diversity. Since it is inseparable from a democratic context, cultural pluralism is conducive to cultural exchange and the flowering of the creative potential that sustains life in society.”

According to UNESCO, this is the hallmark of a mature and civilised society, but there is an internal conflict in this philosophy. Every group is able to believe whatever they wish to be true, but have no right to claim that their ‘truth’ is universal. This being the case, the rules and norms under which we operate as animal scientists can be interpreted as irrelevant to the existence of another group, and our rules may even be interpreted as being harmful rather than helpful.

To summarise, the three issues we have to acknowledge or address in any discussion on what place science has in shaping our nation and solving its problems are that:

- Political interests greatly influence research priorities

- Individual beliefs influence the interpretation of information
- Tolerance of plural or conflicting views is considered to be equivalent to maturity in a society

We as scientists have an enormous role to play in shaping the future of our nation. The challenge is in determining how we can best move forward. While the answer to this is not necessarily self-evident, it is still reasonable to believe that society does value science highly. If we are to find a “common foundation on which informed dialogue can be sustained”, we have to appreciate that our focus has been narrow and that the way that we reason and communicate is not necessarily well understood by the average person. Our role as scientists is to put our research into a context that the public can understand, and if we cannot, then we need to ask why are we doing it?

REFERENCES

- Schillo, K.K.; Thompson, P.B. 2003: Postmodernism for animal scientists. *Journal of animal science* 81: 2989-2994.
- UNESCO 2003. <http://portal.unesco.org/culture/en/ev.php->