Editorial

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In 1918 a strain of influenza- commenced its devastating voyage around the globe, infecting roughly one-fifth of the world's population. It spread in the wake of trade and travel by sea and land.

Lack of communication and networks largely hampered the efforts of many countries to get a cohesive picture of the pandemic. The telephone, less than two decades old, was not widely used and only operated across short distances, while radio transmission was still in code. Thus, with the exception of private mail, telegrams and face-to-face conversation, public information was filtered and disseminated by print media.

Compare this with the news of the recent "swine 'flu" outbreak. Not confined to the bottleneck of centralised media, news was viral in its capacity to spread – and perhaps mutate – swiftly between individuals.

In 1918, while the experts of the day were grappling with a pandemic jigsaw, the 'flu continued to spread. In the contemporary context of climate change, Susannah Eliott of the Australian Science Media Centre (p.4) comments on the importance of timely expert comment in the face of breaking news. "Scientists want time to review all the facts and consider all the issues before commenting on breaking news," she writes. "But by this time, the wave may well have passed them by."

The "wave" has passed science by many times before – debate over the abortion drug RU486 and over Ian Plimer's recent and controversial climate change book are examples noted by Eliott. The media version of events can take on a life of its own – sometimes with qualities of unrealistic weighting – in the absence of prompt and appropriate scientific response.

If scientific input has the potential to moderate the media hype and spin applied to many science stories, why, then, is it declining? Peter Pockley, the first scientist to be employed full-time in the Australian media, laments the erosion of specialised media reportage (p.8). He says that since the beginnings of a relatively robust science media scene in the 1960s, Australian science journalism has been undergoing "a disturbing contraction, which the science community seems unwilling or powerless to arrest". Pockley decries government pressure on research institutions to commercialise research outcomes and the lack of independent "science champions" – individual scientists respected in their field who can shout eloquently about science without fear or favour.

Tim Thwaites, National President of the Australian Science Communicators, cites several reasons for the paucity of "science champions" (p.17). Until recently, communication was given little space in tertiary science courses. Compounding this are the lack of financial incentive for universities and little prospect of kudos for individuals. Success as a science communicator is hard-won.

In democratic societies, the role of public understanding, or misunderstanding, in science should not be underestimated. According to Thwaites, "science in general, and medical science in particular, cannot proceed without a reasonable level of understanding and trust from the general public."

Author and science communicator Julian Cribb (p.20) supports this view, saying that "a democracy without access to the truth is in no better position to rationally decide its future than a dictatorship".

Unfortunately, the media regularly favours emotion and polarisation over objective reportage, particularly when it comes to health and the environment. In Cribb's sobering opinion: "People who work in science need to appreciate that today they are, like it or not, conscripted into the entertainment industry".

Cribb says that media output that is not based on sound science creates opportunities for vested interests "to sway national debate and influence policy affecting tens of millions of ordinary people". The temptation to skew, oversimplify and sensationalise is heightened by the often long and relatively uneventful timeframes of scientific research. Research activities between concept and outcome are often not headline material.

In combination, manipulated information, mass misunderstanding and irrational expectation can become a vicious cycle, with silent science as its victim.

Alan Peterson of Monash University and Alison Anderson of Plymouth University (UK) describe recent findings in Australia and the UK that public understanding of nanotechnology is steadily rising (p.26). "Scientists and science policy-makers have recognised that the representation of nanotechnologies in the media and other forums during the early phase of their development is likely to be crucial to their acceptance or rejection by publics," they write.

Joan Leach of the University of Queensland explains the use of framing in the media to guide interpretation, particularly in scientific, medical and environmental issues (p.24). "Acknowledging that scientific, environmental and medical issues, as reported in the media, come packaged in frames that encourage specific interpretations and not others, encourages a view of science as it is embedded in the social world," she writes. Scientists "have been less likely to place their research in frames. That is usually done when research gets reported, politicised or debated." Learning to reframe rather than refute seems a lesson worth learning.

How can science communication improve? In the past 5 years the Media Doctor website has been publishing ratings of health reports from various sources in terms of accuracy, bias and completeness (p.33). "Media Doctor hopes that by generating interest in both medicine and media arenas it can influence the way researchers present their findings and journalists interpret them".

Tightening loose scientific terminology is a small but significant way to improve science communication, says science communicator Rob Morrison (p.14). "This is a scientific age, but

while people welcome the advances that brings, the process of science itself is poorly understood, its terminology obscure, its methods arcane," he writes. His recommendation applies to scientists and media professionals alike.

Those who fancy some university study can consider several Australian science communication courses, says Nancy Longnecker of the University of Western Australia (p.37). Among other things, "Students examine interfaces between scientific knowledge, industry, policy-makers and the general community".

Stand-alone media skills training is available to scientists who wish to interact more confidently and effectively with the media (p.41). Such training emphasises to scientists the importance of a positive relationship with the media, and it can address their concerns about such issues as misrepresentation and sensationalism.

Science journalist Nicky Phillips concludes this edition of *Issues* by asking what the future holds for science journalism (p.45). Opinion on the value of the internet appears mixed. The advent of blogs has encouraged scientist participation, and young scientists are flocking to online animated tutorials. But is this medium too insular, and who's appraising the content? "…while user-generated content and audience participation will be a significant part of the media's future (science media included), trained science journalists ensure that science presented to the public is accurate and credible", says Phillips.