This is the unedited version of the Media Bites column which appeared in Australian Doctor in November 1999. The published version may have had minor changes.

Media Bites: Great expectations, frauds, science - and the media

It is more than 30 years since the eminent British scientist Peter Medawar asked a question which is of enduring relevance for science (and perhaps the media). *Is the Scientific Paper a Fraud?* was the title of his paper.

Medawar won the Nobel Prize in 1960 for research in immunology, but he is as well known today for his philosophical reflections on science.

Medawar was not arguing that scientific papers are deliberate fabrications, although by now we all know this happens more often than might once have been thought. Rather, he believed that the way scientific papers are organised misrepresents the scientific process by giving "a totally misleading narrative of the processes of thought that go into the making of scientific discoveries".

Medawar rubbished the notion that science is based on induction, the idea that a simple observation leads to generalisations. The belief that scientists make "naive, innocent" observations is "a mere philosophic fiction", he wrote.

"There is no such thing as unprejudiced observation. All scientific work of an experimental or exploratory character starts with some expectation about the outcome of the enquiry. It is in the light of this expectation that some observations are held relevant and others not; that some methods are chosen, others discarded; that some experiments are done rather than others."

His comments could equally apply to media processes. You don't have to be a cynic to realise that media stories are not based on "unprejudiced observation". This morning's newspaper or tonight's news are as much as a reflection of how and by whom they were made as they are a reflection of the day's events.

When journalists investigate stories, they do so with some expectation of what they might find. It is in the light of this expectation that some

sources will be contacted for comment and others may not, and that some comments or findings will be held relevant and others not. As with science, the expectation may make it difficult for the journalist to "see" evidence supporting an alternative hypothesis.

Nor can media stories, by their very nature, reflect "reality". They are written or prepared with the aim of attracting and holding readers or viewers' attention. If they were a true reflection of reality, most readers/viewers would be bored to tears.
Would you rather read a lengthy transcript of a dull press conference, or the short, sharp quote which the journalist thought best summarised what the politician was trying to say?

Despite the provocative title of his paper, Medawar was not damning the scientific process, just urging that its realities be acknowledged. His hypothesis has implications for all breeds of researchers, whether scientific or journalistic.

Scientists or doctors probably read scientific papers in their field of expertise differently from those who are not expert in the area. They are more likely to know the interests or biases of the paper's authors, and to know what information has been left out or over-emphasised, and whether the evidence justifies the paper's conclusion.

Similarly, those who are "in the know" in certain areas of society probably read media stories differently from the general reader. Politicians and their advisers may be able to guess who has leaked information or who are the unnamed sources in a political story, whereas other readers might not have access to such information and thus are not as well equipped to judge the reliability of the information.

Like scientific papers, media stories often assume preexisting knowledge on the part of their readers. Thus, a recent introduction to a newspaper story describing an "Antarctic breast cancer suspect" might be puzzling to readers who were new to the story.

But you don't have to be an expert, scientific or otherwise, to uncover the "frauds" in scientific papers and media stories. Look at the way arguments are constructed, the sources which are quoted, and the conclusions which are reached.

And remember that some expectations, whether held by scientists or journalists, have lead to great discoveries.