Australian Government

# AUSTRALIA'S CHIEF SCIENTIST

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## PEER REVIEW SYMPOSIUM

## 10 MINUTE SPEECH

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## ****** CHECK DELIVERY ******

- Good evening.

- The discussions about peer review which have brought you together are significant

- I am often bemused, annoyed or irritated by the way the concept of peer review is represented these days.

- There are some who wish it to be understood as some sort of gold standard – if it is a peer – reviewed article then it must be something that is of a particular standard – at least.

- That doesn't mean it's right, or wrong. It does mean that it has been scrutinised by a group of people – often a small number – who believe that it is of sufficient value to be published or funded, given that the scientific method and process has been properly followed – as described.

- Nor does it mean that everything that is published after peer review is beyond criticism – indeed it is the much larger 'peer community' that sees the work, or the grant, or the publication later who will make a judgement call about its real value. And a rogue result(s) will be discovered. Science has a self-correcting mechanism – and you have to invoke

notions of a conspiracy or something like that if something that you don't like or don't want to believe is left unchallenged – or confirmed.

- So, there are those who believe that the peer-review system is corrupted – or even corrupt.

- If you cast just a passing glance at the debate around climate change, there are clearly those who believe that an opinion piece has the same value as a peer-reviewed article.

- Indeed, the press is sometimes criticised for a lack of balance when or if it gives little weight to the op-ed piece and gives column inches to the rest that bears some relationship to the balance of the evidence.

- If you explore why, it is sometimes represented that peer review is corrupted – in essence that a bunch of mates or like-minded individuals (the group-think theory) have constructed a global conspiracy (which the players keep secret) that stops 'legitimate' scientific papers from being published.

- I am intrigued by how a global conspiracy could be constructed in the first place – I have never known a bunch of academics or scientists to comply meekly to some instruction – even when it is sensible.

- So, for somebody somewhere to have determined that everybody wherever they are will comply with the unwritten instructions of some group to exclude the writing of somebody somewhere else only because it concludes something different, is just too hard even to imagine.

- But we also know something else: all you really need to do is to sew doubt.  If you want to diminish the standing of someone or something, you just need to express your reservations, repeatedly, and somewhat stridently.  Hinting darkly at fraud, or conspiracy often enough and you are part way there; and you can do that in an op-ed piece that fills a bit of a newspaper, or a magazine or a blog. And there are people who will believe you, and there are those who want to believe you.

- And you don’t need evidence. All you need to say, for example, is that they are paid by somebody (‘the government’ is a favourite) and therefore must play their tune.

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- But that does mean that our peer review needs to be of the highest international standards. And more importantly, it needs to be beyond reproach.

- Only then can our assessment of the quality, in your case of our health and medical research, be as robust as we need it to be.

- And raising public awareness of peer review, and what it means, might also have a role to play in lifting the general population's trust in science.

- For example, in the Public Attitudes to Science survey in the UK, half of those surveyed (52%) said they would be more likely to trust scientific findings, if they knew other scientists had formally reviewed them.[1]

- Which is why the NHMRC's draft *Principles of Peer Review,* the basis of your consultation process, are so important.

- Those principles - fairness, transparency, independence, appropriateness and balance, research community participation, confidentiality, impartiality and continuous improvement – will give our system of peer review acceptance, respect and trust.

- And it is not possible to argue that these are not important principles.

[1] http://www.ipsos-mori.com/Assets/Docs/Polls/sri-pas-2011-summary-report.pdf Pg 13

- But their application requires real effort - and that requires time.

- I note the Australian Academy of Science talks about reducing the burden of peer review and remarks that the amount of time researchers are spending on peer review might be impacting the time available for research. Probably true; for the best/most experienced.

- So what is the alternative?

- I don't think that it is to dispense with, or diminish further, peer-review. But it is to understand it. And explain it, and its value.

- I think the public needs to know the steps we take to assure that standards are met before publication, and that the peer community responds after publication. That robust debate is a part of science.

- This need for understanding will increase as peer review evolves as the conduct of research changes.

- But it does seem to me that we need to look at peer review in several parts. And I am sure that you will have considered these – but let me summarise in my terms.

- So, what is a peer?  How close do they have to be to the proposal, the manuscript, the application under review?

- What are they looking for: that the research was (or will be) conducted diligently, ethically and that the conclusions are (or will likely be) justified by the observations that have been properly analysed?

- Another part is the response of the peer community once it is out there.  It is likely to be much larger – and some of them are more than likely to be much closer to the actual work in the actual field.

- And I think I could argue that part of the process – call it peer or scientific – is that the work is accepted, or not, once it has been scrutinised, replicated or otherwise, and stood the test of time in that (critical) environment.

- It is after all true, that good scientists take a while to be satisfied – or put another way - good scientists take little at face value but see data as an opportunity to have a robust debate about the value, the interpretation, and the conclusions that can, or should, be drawn.

- I remember a celebrated case a few years ago in the UK. As I recall, it was the peer community that identified the flaws in a paper that changed the vaccinating habits of a fair number of parents.

- It was not an op-ed writer in a newspaper who produced the evidence. It was peers who were sceptical and did something about it. Experts who did something about it – tested, analysed, interpreted and found the flaws,

- So let me end with a word about courage.

- It takes courage to stand up to be counted. But it is the standing up that is an important part of our peer system. The review, the analysis, the critique, the confirmation or the change, the replication or the failure to replicate can all bring you into conflict – within the peer group and outside.

- The change to our thinking that comes from the process is a key to understanding and advancement. It can't stop.

- So don't stop. Our system, even our civilisation, depends on it

- Thank you