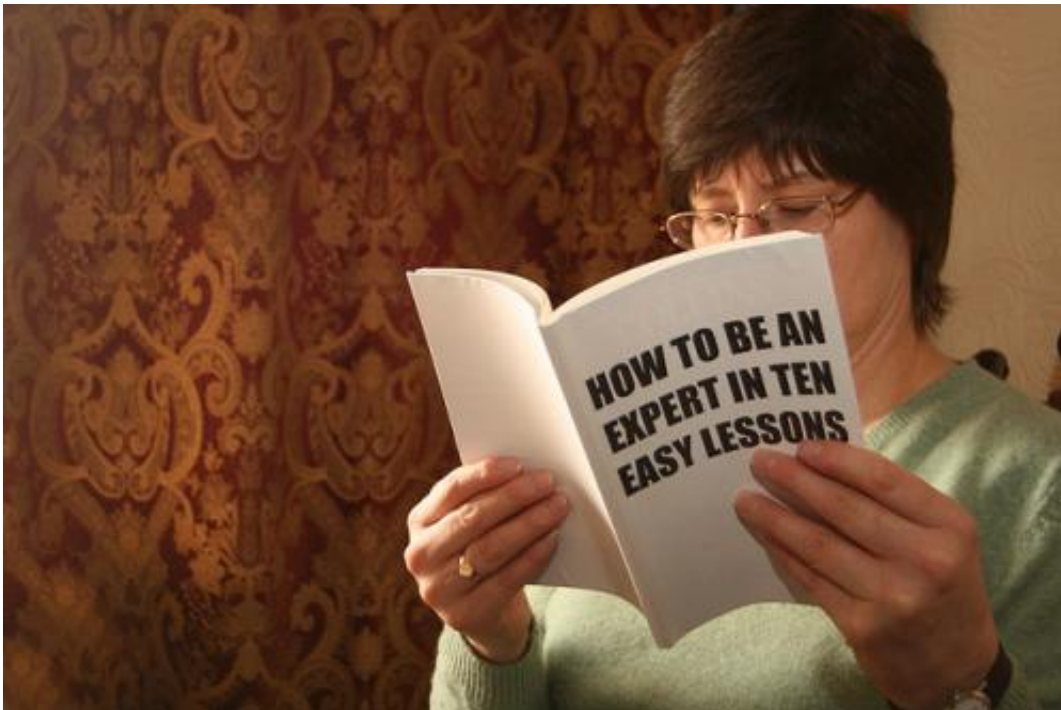


# Why we need to listen to the real experts in science

January 5 2015, by Michael Clarke And Susan Lawler

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Anyone can claim to be an expert these days. Credit: Flickr/Alan Cleaver , CC BY

If we want to use scientific thinking to solve problems, we need people to appreciate evidence and heed expert advice.

But the Australian suspicion of authority extends to experts, and this public cynicism can be manipulated to shift the tone and direction of

debates. We have seen this happen in arguments about climate change.

This goes beyond the tall poppy syndrome. Disregard for experts who have spent years studying critical issues is a dangerous default position. The ability of our society to make decisions in the public interest is handicapped when evidence and thoughtfully presented arguments are ignored.

So why is science not used more effectively to address critical questions? We think there are several contributing factors including the rise of Google experts and the limited skills set of scientists themselves. We think we need non-scientists to help us communicate with and serve the public better.

At a public meeting recently, when a well-informed and feisty elderly participant asked a question that referred to some research, a senior public servant replied: "Oh, everyone has a scientific study to justify their position, there is no end to the studies you could cite, I am sure, to support your point of view."

This is a cynical statement, where there are no absolute truths and everyone's opinion must be treated as equally valid. In this intellectual framework, the findings of science can be easily dismissed as one of many conflicting views of reality.

Such a viewpoint is dangerous from our point of view.

When scientists disagree with one another, as they must to ensure progress in their field, it is easy to argue that it is not possible to distinguish between conflicting hypotheses. But scientists always agree that [critical thinking](#) done well eventually leads to a better understanding and superior solutions. All opinions are not equal.

If you are flying in an airplane at 30,000 feet, you will not be content with just any scientific study about whether the wing will stay on the plane. Most people will want to put their trust in the calculations of an expert aeronautical engineer who understands the physics of stresses on the wing.

So why do we not want to trust experts in bushfire management, or [climate change](#)? Because most people are happier with experts whose conclusions fit their own ideas.

This encourages people to express their opinions, and the internet allows those opinions to get a wide viewing. This makes for interesting times, but not always effective solutions.

## Google experts

The internet is filled with information and ideas. Everyone can quickly find "answers", and this means that everyone is an "[expert](#)".

But using Google to find the answer to Trivial Pursuit questions is not the same as researching a complex question. Experts do have skills and one of those is the ability to use high quality sources, up to date theoretical frameworks, and critical thinking based on their experience in a particular field. This is why an expert's answers are going to be more accurate and more nuanced than a novice.

For example, people who use Dr Google to diagnose their symptoms before visiting an actual doctor, sometimes ask to be tested for diseases they do not have, or waste time seeking a second opinion because they are convinced that their "research" has led them to a correct diagnosis. If it were really that easy, would doctors have to spend all those years in medical school?

There is another problem called the [Dunning-Kruger effect](#), which states that "people who lack the knowledge or wisdom to perform well are often unaware of this fact".

In other words, people who think all answers can be found on Google are likely to be unaware of the effort involved in solving complex problems, or why years of specialist training might help.

This is almost more dangerous than complete ignorance, because unlike Donald Rumsfeld, they don't even know what they don't know.

Easy access to huge volumes of confusing information sits very comfortably in a post-modern world. Unfortunately, the outcome is that most people are reluctant to do the intellectual hard work of sifting through competing hypotheses. So how are we to engage in robust scientific debates in such a public arena?

## **Science is not enough**

It has been said many times that scientists need to communicate their research more broadly. The challenges are well known – peer reviewed scientific publications are necessary for our careers and time spent engaging with the public is time away from the field, our computers and laboratory benches.

Nevertheless, if we hope to influence government policy we cannot assume that the implications of our research will be understood by those who most need to know what we are doing.

Reaching out to busy bureaucrats and politicians is not something that comes naturally to scientists. To turn science into policy we need a diverse team of people with different but complementary skills who share a commitment to the task.

Skills that are not commonly found in scientists may be found in political scientists, lawyers, sociologists, public relations companies, the arts community and the media.

Forming relationships with people who can translate our findings into something that cannot be ignored may be critical to success.

Consider what we are up against, lobby groups with deep pockets have come up with brilliant assaults on the thoughtful management of our environment.

"Cutting Green Tape" or "No fuels, no fire" – these clever bits of spin threaten decades of rigorous research and policy development. This is not a failure of science, but a triumph of imagination. We have been dramatically out-manoeuvred, shown to be amateurs, in the world of presenting competing ideas.

At a recent fire forum we learned that current policy is: "Based on [science](#), but driven by values." This means that despite the best evidence, the values of our current society will decide when to act. This introduces another definition of truth seeking, based on who made the best argument in a political or legal process.

Science is meant to be done dispassionately and objectively, so scientists are not well equipped to participate in debates about values. This is the realm of ethicists, philosophers, artists and theologians.

But if we are passionate about applying the lessons learned from our research, we will need marketers, lobbyists, communication experts, accountants and economists. A multi-disciplinary team is required to convince society to change.

Perhaps the people with these complementary skills will be able to help

break down the anti-intellectualism we face, for the benefit of all.

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