

We should broaden our view of science if it's to help make good public policy

March 10 2016, by Penny Hawe, University Of Sydney



Sometimes science needs to look at the bigger picture in order to best influence public policy. Credit: Pixabay

Actor and science advocate [Alan Alda](#) will address the National Press Club today, talking about the importance of communicating science to the public.

Alda is in Australia to launch the new facility at ANU's [Centre for the Public Understanding of Science](#) and to herald that ANU's world-leading

program in [science communication](#) will be twinned with the one Alda oversees at [Stony Brook University](#) in the US.

Alda runs workshops with scientists that create vivid moments of connection between scientist and audience. In these moments the audience thinks like a scientist.

And a scientist may see aspects and assumptions in their own work that they have not seen before.

How you learn about the world depends on where you look

When you hear many people talking about science, chances are they'll be talking about things like protons, genes and neurons.

This is because a vast number of advances have accumulated in fields like physics, genetics and neuroscience. These result from investment in [the type of science that generates economic prosperity](#), often called "innovation studies". This has been a priority in most countries since last century.

Science for innovation has also brought us investment in the instruments of observation. Instrumentation reveals new frontiers. In health and medical science, scientists are now capable of using smaller and smaller units of analysis, including cells, genes and parts of genes, to appreciate disease processes. Understanding these processes logically leads to the design of gene therapies.

But some health scientists draw their insights from looking in the opposite direction. They look for patterns and clues about disease processes in larger and larger units of analysis, such as whole populations

and nations.

Only by studying populations can we know about person-to-person disease transmission. Social stratification is another factor affecting disease rates that exists only at the population level.

[Position in the social hierarchy](#) predicts mortality rates, regardless of things like smoking or physical activity. People living in [neighbourhoods with higher social capital](#) – including things like common norms and expectations of reciprocity and trust – also have better health.

Even a country's [position in the global trading networks](#) is associated with the most vital of health indicators, infant [mortality rates](#).

While some scientists pursue these insights by getting down to cells and genes (again), wondering how "the social" [gets under the skin](#), others design solutions at the population or [public policy](#) level. They try to harness the dynamics that promote health and health equity and prevent the problems occurring in the first place.

This science is called [population health intervention research](#). It is part of the larger field of population health science or public health.

These are not widely known fields. Yet some, but by no means all, of the methods and reasoning processes are exactly the same as the larger mainstream in science.

For example, the evidence that we can make [schools more socially inclusive](#) and reduce substance use comes from randomised controlled trials. The evidence that [economic empowerment of women](#) in developing countries reduces domestic violence also comes from such trials.

These are the same methods that Australia uses to decide [which drugs get sponsored by Medicare and which ones don't](#). What differs is that basic and clinical scientists suggest drugs and technologies to tackle health problems. Population [health](#) scientists suggest public policy.

Who benefits from science?

However, it would be wrong to portray public policy as wholly based on science. It is not. And many would argue that it [should not be](#).

But at a time when conversations about science and society are expanding, one can't help but notice that some sciences are more visible than others. This may have unfortunate consequences.

For example, [we know how](#) to make schools more friendly, socially inclusive places. We know this has a big effect on kids' [well-being](#). But will we have to wait until essentially the same point is made using [brain imaging](#) before we see a serious commitment to action? Is one type of knowledge being made more "real" than another?

Alda's visit is an opportunity to ask important questions about science. How should we think about it? Whose interests does it serve? How do economic incentives shape the production of knowledge? Who benefits? Who profits?

And why do we naturally pair the words "science" and "technology", but maybe not the words "science" and "public policy"?

Perhaps we all can make Alda's visit an opportunity to address aspects and assumptions about science that we've not discussed fully before. If great moments in science communication come from showing how [science](#) "affects our daily lives", then some sciences arguably should be a bit more in the spotlight.

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