

## Book Review: Are We All Scientific Experts Now? by Harry Collins

*A series of recent scientific scandals, frauds, and failures have led some to question science's pre-eminence. Revelations such as Climategate or debates about the safety of the MMR vaccine have dented public confidence in science. **Are We All Scientific Experts Now?** is a valuable contribution to the ways in which we ascribe value to expertise, writes **William Allen**. Although Collins convincingly answering the book's title question with a resounding 'no', what is most interesting and refreshing about his analysis is that it enables people holding different kinds of expertise to recognise their role in scientific debate.*

**Are We All Scientific Experts Now? Harry Collins. Polity Press. February 2014.**

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In late 2012, an outbreak of measles occurred in Great Britain. Eventually resulting in over 1,200 cases especially affecting children, the spread of this infectious disease was due to low levels of vaccination. The reason for this stretched back to a high-profile 1998 study claiming to link the measles-mumps-rubella (MMR) vaccine with autism in children. Subsequent media coverage featured parents claiming that their children began displaying symptoms of autism after being given the MMR vaccine. Although epidemiologists explained there was no scientific evidence correlating the two, UK vaccination rates for MMR declined in the early 2000s. As a result, 'herd immunity', or the collective protection offered by the majority of a population being vaccinated, was sacrificed, and the disease returned with serious consequences.

This recent experience captures a central concern about the role of 'expert opinion' in society and policy: can ordinary citizens make scientific decisions that are equal to, if not better than, scientists themselves? Does the training of health professionals carry as much weight as the experiences and knowledge of concerned parents using Google Scholar? More simply, are we all scientific experts now?

This is precisely the question that [Harry Collins](#) puts forward as the title of his new book. In a concise and thought-provoking narrative, he argues we are not all *scientific* experts, but possess and acquire various types of expertise that are useful in different circumstances. More fundamentally, he wants to persuade readers that 'if we want our judgement about the natural and social worlds made by good, disinterested people, then we should... learn, once more, to elevate science to a special position in our society' (p.132).

To reach this conclusion, he divides major shifts in attitudes towards science into three waves. The first wave in the late 1940s and 1950s was characterised by an imperative to explain why science worked without questioning either the successes or the methods of scientific enquiry. However, this changed in the second wave of the 1960s, where scholarship emerged arguing that what counted as 'truth' or valid 'evidence' could vary depending on where and when experts conducted their work. This fomented the attitude that 'there is nothing so special about science – the scientific emperors, if not completely naked, are in their underwear' (p.26).

The third wave, into which Collins' book fits, argues that scientific expertise is indeed different from other human activities in terms of its purposes and values, and as a result, makes important contributions to society. Scholars of this third wave focus their attention on realistically describing the skills, norms, and practices which actually define scientific processes. Their goal is to 'treat science as special without telling fairy stories about it' (p.81).





Protection for life? Credit: [The Boatman](#) CC BY-NC 2.0

In the second chapter, he explains how such scientific expertise arises. Specialists come in two kinds: (1) those for whom their knowledge on a subject is derived from either popular trivia, media documentaries and science magazines, or reading primary sources such as journal articles; and (2) those whose knowledge comes either via direct apprenticeship or training in techniques under other experts, or through social interaction with these experts to the point of gaining fluency in their domain-specific 'language'.

An example of this latter kind of expertise would be peer review: although it is unlikely that reviewers will have done *exactly* the same work they are reviewing, they still use expertise gained from interacting with colleagues to make an evaluation. This characteristic of informing decision-making distinguishes these two kinds of specialist experts. Choices about which vaccines to deploy – as well as in what quantities among which populations – require scientific expertise that can be gained only through practical experience, not only from reading about vaccines.

So what can ordinary people who have not had either extensive training or direct contact with scientific experts contribute? What say do they have in supposedly 'expert' affairs? In its fourth chapter, Collins' book outlines an important role for correctly identifying when scientific processes are distorted or falsely presented. People have the ability to choose among experts, called 'meta-expertise' in his terms. This trait is exemplified by whistleblowers who draw attention to perceived lapses in scientific process – for example, when scientists are paid by companies for publishing favourable results, as was the case in the UK measles vaccine study.

However, Collins also argues that these whistleblowers must show their investigative work in a way that convinces others who disagree with them: in the example of vaccine protestors, he firmly states that 'we need the equivalent of a Watergate investigation rather than the felt certainties of a parent, however emotionally convincing those feelings are' (p.114). This requires careful, forensic evaluation similar to identification of corruption, rather than reliance upon polarised assertion. Collins concludes that we are not all *scientific* experts because we do not possess the requisite training and tacit knowledge gained via interaction or apprenticeship to make informed scientific decisions. But, we *can* in certain circumstances display other important kinds of expertise – notably the ability to discriminate among competing claims.

Collins' narrative is compelling because it expands a view of expertise to include the different ways by which knowledge is acquired and publicly debated. One concern is Collins' use of the term 'ordinary citizen' which potentially elides over the politics surrounding which people are allowed to contribute their expertise in the first place. What about those who lie outside the purview of conventional legal citizenship? Placing this book alongside other critical explorations of citizenship and scientific debate, such as Frank Fischer's (2000) work [Citizens](#),

[Experts, and the Environment: The Politics of Local Knowledge](#) would help augment Collins' main arguments.

Yet in total, *Are We All Scientific Experts Now?* is a valuable contribution to the ways in which we ascribe value to expertise. Although Collins convincingly answering its title question with a resounding 'no', what is most interesting and refreshing about his analysis is that it enables people holding different kinds of expertise to recognise their role in scientific debate.

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**William Allen** is a Research Officer with the Migration Observatory and the Centre on Migration, Policy, and Society at the University of Oxford. He conducts two streams of research: one focusing on how British media portrayals of migrant groups impact policies and public attitudes towards immigration; and the other examining how data and evidence-based social research are publicly discussed as well as visually communicated. He is currently working on the AHRC-funded project 'Seeing Data: Are Good Big Data Visualisations Possible?'. Follow his work [@williamlallen](#). [Read more reviews by William](#).

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