

Introduction: experts and establishments

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Today's complex society is increasingly dependent on experts — civil engineers, surgeons, taxation lawyers, computer programmers, economists, and many others. These experts are usually defined by their credentials and their solidarity with mainstream professional bodies. Those who oppose them often do not have the same credibility, although they may have the same levels of knowledge and experience.

This book contains first-hand accounts from individuals each of whom has made a challenge to a body of experts. The authors tell about their motivations, their methods, their successes and failures, and the attacks mounted against them. There are some eye-opening stories here, especially in what they reveal about the behavior of establishment experts and the obstacles to open debate. Together, these accounts provide exceptional insight into how to go about challenging the experts.

To introduce this topic, I begin by briefly describing some of my own experiences, before turning to some general considerations. My first major confrontation with experts began in 1976 when I moved to Canberra, the national capital of Australia, and became involved in the campaign against nuclear power and uranium mining. The issue was one of the most prominent of the day: a major environmental inquiry into uranium mining was under way and the government's position was yet to be finalised. As a result, there were numerous media stories. Schools and community groups were eager for speakers. One way I became involved was through the letters to the editor of the city's sole daily newspaper, the *Canberra Times*, which published numerous contributions both for and against nuclear power and uranium mining.

The most prominent and regular pronuclear contributor was Sir Ernest Titterton, Professor of Nuclear Physics at the Australian National University, whose involvement with and advocacy of nuclear technology dated from the 1940s. As a local, high-status authority, Sir Ernest could easily get his articles and letters published. Other prominent pronuclear contributors were Sir Philip Baxter, former head of the Australian Atomic Energy Commission, and Mr John Grover, a mining engineer.

I composed my letters and articles with care, checking all details with knowledgeable friends.¹ Debate through the letters column was not something for the faint-hearted. I remember the queasy feeling in my stomach the first few times I was directly criticized by later correspondents. How unfair, yet how clever, their arguments sometimes were! There was so much to say in response. Yet, how could I say it all in my next letter, in just a few hundred words, and yet not lose new readers by squabbling over minor details?

Most of the debate was about the role of the civil nuclear power industry in the proliferation of nuclear weapons, the safety of nuclear technology, the economics of uranium mining and the viability of alternatives to nuclear power. The topic of expertise also came up. Sir Ernest asserted that virtually all experts supported nuclear power and that opponents were "a small group of anti-uranium operators who miss no opportunity of spreading their propaganda."² Sir Philip presented a more paranoid position, claiming that the antinuclear movement was infiltrated by communists; he was also highly derogatory of individual opponents. John Grover repeatedly made the point that the vast majority of

scientists and engineers supported nuclear power, while only a discontented minority opposed it.

The nuclear establishment's argument, that experts know best and that most nuclear experts supported nuclear power, was a challenging one, for it was certainly true that most nuclear experts did support nuclear power. In replying to these arguments, I had one advantage: I was a scientist myself. My recent PhD was in theoretical physics, though not in nuclear physics. But I knew enough science to realize that the nuclear debate was *not* primarily about nuclear expertise. The key issues — environmental hazards, nuclear proliferation, civil liberties in a nuclear society, economics of uranium mining, centralization of political and economic power in a nuclearized world, the impact of uranium mining on Aboriginal communities, and alternatives to nuclear power — involved political, economic, social, cultural and ethical dimensions.

My response to the “experts-know-best” argument had several strands. First, I pointed out that the so-called experts often had made mistakes in the past. Why should the public trust them now? Second, I argued that expertise in nuclear science and engineering was not central in the nuclear debate. Did knowledge of neutron scattering cross-sections really give one a special right to pronounce on energy options? Third, I claimed that the experts had a vested interest in supporting nuclear power, because it was compatible with their careers and world view.

This confrontation with pronuclear experts was illuminating. It was challenging enough for me just to debate the issue through articles and letters in the newspaper. I was very impressed when some of my friends in the antinuclear movement engaged in public debate with Sir Ernest or some other pronuclear speaker. It took real courage to tackle an experienced, self-confident (or, some would say, arrogant), high-prestige scientist in open debate.

There is no doubt that Sir Ernest, Sir Philip and others did have high prestige in the wider community. Their knighthoods, their eminent

positions and their long influence in government policy-making gave them a big head start in any debate. In the mid 1970s, the idea that Australia's rich uranium deposits should not be mined — when there was plenty of money to be made doing it — was considered radical, if not entirely foolish. Most of us in the antinuclear movement were young and without high formal status. However good our arguments were, we started at a disadvantage in relation to the pronuclear experts.

Things were even more difficult in small country towns. Confronted by a visiting pronuclear expert, the local antinuclear activists were hard pressed to mount an effective response. With an awareness of such situations, I decided to apply my developing social science skills to writing a critique of the views of the leading proponents of nuclear power. An abundance of material led me to focus initially on Sir Ernest and Sir Philip. I tracked down all their articles I could find, using newspaper clipping services, the National Library, abstracting services and citations. Then I analyzed their views on nuclear power, nuclear weapons and the nuclear debate. It was no surprise to find that the views of these nuclear experts were closely linked to their professional positions. For example, Sir Ernest and Sir Philip in the 1960s admitted a connection between civil nuclear power and proliferation of nuclear weapons, because they hoped to keep open the option of Australian nuclear weapons, whereas in the 1970s they denied this connection, since proliferation had become a central argument against nuclear power. My booklet provided a convenient compendium of quotations and critical comment.³

My experience in the nuclear debate gave me some understanding of how to go about challenging a body of experts. It also made me aware of how important and how difficult this could be.

The nuclear debate stimulated my interest in the social role of experts, in how experts gain and exercise power, and how they can be challenged. This continuing interest led me to investigate various academic studies of experts, to read many revealing exposés of

establishment positions, and to prepare a handbook on methods for challenging experts.⁴ But none of these provides much help to those who would like some insight into what it takes to *be* a critic of dominant experts. That is why this book seemed worthwhile.⁵ It aims to provide insight into the hazardous business of questioning the dominant experts.

Experts are important

It hardly needs mentioning that experts play a crucial role in modern society. If the term “expert” is used in the everyday sense of a person who knows a lot about a subject or can do a task extremely well, then there are experts of all varieties, from bricklayers to brain surgeons and from cooks to computer analysts. Experts in this sense are skilled people.

But there is another sense of “expert” which involves an additional dimension. This occurs when a group of skilled people is able to convince others that they are the exclusive authorities in an area. Bricklayers and cooks have seldom been able to do this: they are rarely quoted in the media concerning policies on housing design or diet. The groups that have succeeded in making their claims to expertise an avenue for considerable power, status and authority include doctors, lawyers, scientists, engineers and economists. These occupational groups — commonly called professions — have been able to expand their influence and status beyond what might be expected on the basis of the skills possessed by their individual members. These groups thus can be said to have succeeded in the “political mobilization of expertise,” where “political” is used here in the broad sense of involving the exercise of power.⁶

“Political expertise” is a familiar feature of western societies. We are all used to hearing authorities pronounce on various issues. Economists make statements on the economy; doctors make statements about diet. I encountered it in the nuclear debate when Sir Ernest and Sir Philip, on the basis of their position as eminent nuclear scientists, made what they considered to be authoritative statements on

energy policy, including fossil fuels and renewable energy sources.

Actually, the preferred role of most experts is behind the scenes, quietly doing their job. Almost all scientists and engineers work for government, industry or universities. Doctors and lawyers are more likely to have private practices. There are two points that are important here. First, most experts are closely tied to powerful interest groups. Second, these groups are seldom challenged in fundamental ways, and therefore experts do not need to take their case to the public. (There are exceptions to this pattern, however, such as some issues of foreign policy where the experts need to continually present their views and seek to monopolize the discussion.)

Nuclear scientists and engineers worked behind the scenes for several decades — the 1940s until the early 1970s — without having to justify their support for nuclear technology. This was because many governments supported nuclear research, nuclear electric power and, in quite a number of cases, nuclear weapons. When, in the 1970s, a citizens’ movement against nuclear power developed, quite a number of these scientists and engineers joined the public debate. They presented themselves as the experts.

This is the usual pattern. Most doctors or civil engineers just get on with the job, most of them working where the pay and conditions are most attractive, committed in their own way to doing a good job. Only occasionally is there some challenge to professional status or conditions: a plan for national health insurance, or the environmental and health damage from a large dam. In such circumstances, a few vocal doctors or engineers are likely to take the lead in defending what they see to be the interests of the profession as a whole.

So here is the general picture: the dominant group of experts in any field is usually closely linked to other power structures, typically government, industry or professional bodies. The links are cemented through jobs, consultancies, access to power and status, training and other methods.

Few people would object to such links if the experts were always right. But they aren’t.

There are many examples where — at least according to later judgements — the dominant experts have backed wrong ideas, dubious or corrupt practices, and illegitimate vested interests. For example, geologists for decades rejected the theory of continental drift. The idea that continents could move was considered eccentric, and those who treated it seriously were treated with suspicion. Yet now continental drift is the accepted theory.

In the early 1930s, in the midst of the economic depression, the standard economic view in industrialized countries was that government expenditure should be reduced. Later economists, following the views of Keynes, saw government intervention as particularly necessary in such times. Military experts provide another example. During the 1960s, US military experts regularly proclaimed that US military involvement in Vietnam could soon be decreased because their communist opponents were nearly defeated. Just as regularly, their forecasts turned out to be completely wrong.

There are certainly plenty of examples showing that individual experts can be wrong.⁷ That's only to be expected. After all, anyone can be wrong, even an expert. The important situation is when a whole body of experts is linked to a powerful institution — government, industry, profession, church, etc. — and the expertise is systematically used to serve the institution at the expense of the public interest. When influential experts are wrong in this situation, then it is serious indeed.

This can happen on a regular basis, so long as there is no challenge to the expert claims. An unopposed body of experts has great influence in justifying policies and practices. Enter the critic. When even a single expert disagrees and is able to reach a substantial audience, whether professionals or a wider public, there is no longer unanimity. Instead of an expert monologue, there is now a debate between differing experts. Critics thus have a disproportionate impact on the public perception of an issue. Experts can no longer remain in the background with their positions safe from scrutiny. A few of them, at least, must

join the fray to ensure that the critics do not become too influential.

The critics, because they can puncture the appearance of unanimity, often come under attack. They may be slandered, have their publications blocked, or lose their jobs. This may sound extreme, but it is all too common. I started studying the topic of “suppression of intellectual dissent” in the late 1970s. It didn't take long to find that suppression of dissent is a pervasive phenomenon. Indeed, it seems to be a key means by which dissent among experts is discouraged.⁸ (The other important means are rewards for conformity — jobs, promotions, awards — and professional acculturation into a standard picture of the world.)

The contributors to this book are prominent critics of establishment experts. They have taken the courageous and dangerous step of openly and persistently questioning the dominant position. As a result, they have encountered an array of hostile attacks on their credibility and sometimes their careers.

Why are the experiences of these critics worth telling? For one thing, they are simply amazing stories. But, more importantly, society needs more such critics. Without critics, expert establishments have too much power and, as Lord Acton's saying puts it so well, “power tends to corrupt.”⁹ In order to promote a more open and participatory society, it is crucial that dissident views be heard.

The philosophy behind this book is that society will be better off if more people are able and willing to openly question standard views. This holds true even if critics, by later judgement, turn out to be wrong. What is important is the process of open debate. When debate is inhibited or squashed, the potential for abuse of power is magnified enormously.

It is useful to remember that what we today think of as progress resulted from the overthrow of widely and passionately held beliefs linked to powerful vested interests. The promotion of public hygiene, the abolition of slavery, and the challenge to women's oppression, among others, each took place in the face of powerful forces backed up by esteemed experts.

When I invited individuals to write chapters for this book, I asked them to give a personal account of how they went about confronting establishment experts. Surprisingly, there were few role models I could give them. There are, to be sure, a number of accounts attacking particular bodies of experts, such as Rachel Carson's classic *Silent Spring* and Ralph Nader's classic *Unsafe at Any Speed*.¹⁰ Yet these works give little information about how the critic collected evidence, put it together and built a persuasive case.¹¹ There is also a body of academic literature dealing with experts and expertise. But I find it of little use for a practical understanding of what is involved in mounting a critical attack against experts.

When I set about inviting contributors and case studies, I had several criteria. One was the existence of a powerful establishment position with recognised experts or expertise, such as the nuclear industry, orthodox medicine and mainstream political opinion. Second, I looked for critics who had devoted a major effort to attacking the experts rather than primarily presenting their own particular alternative position. Finally, I looked for cases in which the dominant experts had responded in a way which revealed the nature of the establishment with which they were linked. The contributors and case studies all satisfy these requirements well.

Sharon Beder deals with an engineering establishment that set the parameters for the Sydney sewerage system over many decades. Engineering establishments are incredibly influential in shaping the infrastructure of society: roads, rail, electricity, telephone, water, ports, computer networks and others. These are not just technical matters: there are questions of power and wealth involved, as well as the direct involvement of corporate and government vested interests. But these political and economic dimensions are usually hidden behind a facade of technical expertise which is seldom considered something for public debate. Beder investigated and exposed the operation of one such engineering establishment, helping to force it, kicking and screaming, into the public eye.

Mark Diesendorf tells about his challenge to the dental and medical experts who support fluoridation. Issues affecting people's health often provoke intense interest and debates, as testified by the prominence of diverse issues concerning cigarette smoking, cholesterol, AIDS, vitamins and cancer. Experts are involved in these and many other areas, and many of these experts are influenced by powerful interest groups, including pharmaceutical companies, industrial polluters, and the medical and dental professions. Promoters of fluoridation are an especially powerful and well-organized establishment. Diesendorf, one of the world's leading anti-fluoridation scientists, revealed much about this establishment through his potent challenge to it.

Edward Herman has challenged the scholars, commentators, politicians and government functionaries who have defined "terrorism" in a way convenient to Western governments. It is a simple fact that most organized killing in the world today is done at the behest of governments, either in wars or by repressive governments against their own citizens. This is forgotten or obscured when "terrorism" is defined as the action of small antigovernment groups or a few renegade governments. This is one example of how Western governments systematically shape popular perceptions of political reality and are thus able to escape proper scrutiny of their actions. Herman is an eminent scholar and also a committed partisan who has done as much as anyone to expose the double standards of the "terrorism" establishment experts — though this task is enormous, considering the power and ideological sway of national security establishments.

Harold Hillman started off just doing biological research and ended up confronting an enormously powerful biology research establishment. In spite of popular views to the contrary, scientific research is an incredibly conservative enterprise: innovation of particular sorts is welcomed, but challenges to fundamental principles are typically rejected out of hand. The reason is simple: many prestigious and not-so-prestigious scientists have an enormous stake in the prevailing set of ideas and directions. Hillman reveals much

about the power of scientific research establishments in his challenge to long-held assumptions about standard methods for biological research.

Michael Mallory and Gordon Moran questioned the standard interpretation of a single art work and thereby came up against the full force of an art history establishment. To some, it might seem that not as much is at stake in the arts as in engineering or government policy, but the same processes apply. Art history is one facet of the more general process of creating and certifying ways of understanding human culture. Various “culture experts” have set themselves up as the authorities in this process, and it is as difficult to challenge orthodoxy here as anywhere else. What is at stake is primarily careers, status and cultural self-understandings. Mallory and Moran were led into a continuing engagement with an art history establishment which, through its reactions, revealed more about itself than about the art work in question.

Dhirendra Sharma challenged the czars of nuclear power and nuclear weapons in India and, as a result, was targeted for attack. In numerous countries around the world, nuclear technology has been supported by powerful forces in government and industry and opposed by citizen groups. A few experts have had the courage to speak out against nuclear developments and many of them have been attacked for doing so. In India, the task has been especially difficult because of the close personal links between the nuclear establishment and powerful figures in government and industry who had shown their capacity to silence dissent. Another difficulty is the lack of any tradition within India’s scientific community of speaking out in the public interest. Sharma paid a serious price for his dissent, but even so he may have been fortunate that the price was not even higher.

I think that each of these critics has a strong case, otherwise I would not have invited their contributions. However, the point of the book as a whole is not to argue that each of these critics is correct and each of the establishments is wrong, but instead to provide insight into the process of confronting an expert

establishment, including insight into the operation of the establishment and into successful and unsuccessful methods of mounting a challenge to it.

Reading these accounts, especially the stories of attacks against the critics, makes it tempting to think of expert establishments as unscrupulous conspiracies. Personally, I prefer a different interpretation. Within establishments, the dominant view is so taken for granted that a radically different viewpoint is virtually inconceivable and certainly has no credibility. This means that the critics are easy to dismiss as ignorant or dangerous or both; furthermore, the methods used against them are seen as necessary to protect a worthwhile enterprise. It has long been my view that nearly everyone has the best of intentions, and I believe that the stories told here are compatible with this view. The stories can be interpreted as struggles between groups and individuals each of which believes they are defending or promoting important truths. But some of the contributors may disagree with me on this!

A big challenge faces any expert writing for a general audience: how can the material be made understandable without sacrificing accuracy and rigor? This applies to an even greater extent to critics of experts. (Make no mistake, these critics are experts themselves. They simply disagree with the establishment position.) The views of the critics are much more likely to be unfamiliar to others, and therefore more space is needed for them to explain things, since less can be taken for granted.

As a result, some of these chapters contain difficulties for some readers. Those without scientific training may find parts of Harold Hillman’s chapter difficult. Those without familiarity with the visual arts may find parts of Michael Mallory and Gordon Moran’s chapter challenging. My advice is to not get stuck on difficult parts. There is plenty of valuable material even for those with no knowledge of the field. Technical detail has been kept to a minimum. For those specialists who want *more* information, plenty of references are cited in each chapter.

There are a number of biases in my selection of contributors. There are numerous critics whose stories would be worth telling and I managed to obtain contributors from a range of fields. Other problems were harder to overcome. A gender balance is difficult to achieve, and would be somewhat artificial, because in many fields most experts, critics or otherwise, are men. For example, virtually every leading figure in the fluoridation debate is a man. Another, related, bias is my selection of individual critics. Some of the most important challenges to establishment experts come from collective endeavors, most notably within the feminist movement.¹² Yet another bias is my restriction to English-language critics.

To these and other biases I plead guilty. The extenuating circumstance is the importance of the task. I hope that this book will encourage other critics to tell their stories. More importantly, I hope these stories will encourage some readers to become critics themselves and to undertake the challenging and stimulating task of confronting the establishment experts.

Notes

1. Mark Diesendorf, a contributor to this book on another topic, was especially knowledgeable and helpful.

2. E. W. Titterton, letter, *Canberra Times* (30 March 1979): 2.

3. Brian Martin, *Nuclear Knights*, Canberra: Rupert Public Interest Movement (1980).

4. Brian Martin, *Strip the Experts*, London: Freedom Press (1991).

5. Sharon Beder collaborated in the initial development of the plan for this book.

6. On the analysis of professions as systems of power, see Steven Brint, *In an Age of Experts: The Changing Role of Professionals in Politics and Public Life*, Princeton: Princeton University Press (1994); Randall Collins, *The Credential Society: An Historical Sociology of Education and Stratification*, New York: Academic Press (1979); Charles Derber, William A. Schwartz and Yale

Magrass, *Power in the Highest Degree: Professionals and the Rise of a New Mandarin Order*, New York, Oxford University Press (1990); Eliot Freidson, *Professional Dominance: The Social Structure of Medical Care*, New York: Atherton (1970); Terence J. Johnson, *Professions and Power*, London: Macmillan (1972); Magali Sarfatti Larson, *The Rise of Professionalism: A Sociological Analysis*, Berkeley: University of California Press (1977).

7. Christopher Cerf and Victor Navasky, *The Experts Speak: The Definitive Compendium of Authoritative Misinformation*, New York: Pantheon (1984).

8. Brian Martin, C. M. Ann Baker, Clyde Manwell and Cedric Pugh (eds.), *Intellectual Suppression: Australian Case Histories, Analysis and Responses*, Sydney: Angus and Robertson (1986).

9. This insight is confirmed by psychological experiments. See David Kipnis, *The Powerholders*, Chicago: University of Chicago Press (1981, second edition); David Kipnis, *Technology and Power*, New York: Springer-Verlag (1990).

10. Rachel Carson, *Silent Spring*, Boston: Houghton Mifflin (1962); Ralph Nader, *Unsafe at any Speed: The Designed-in Dangers of the American Automobile*, New York: Grossman (1965).

11. Lois Marie Gibbs as told to Murray Levine, *Love Canal, My Story*, Albany, State University of New York Press (1982) is good on this issue but deals much more with establishments than the experts. I thank a referee for mentioning this book and the one by Brint (note 6 above).

12. A prominent example is the Boston Women's Health Book Collective whose book *Our Bodies, Ourselves*, Boston: New England Free Press (1971, and several later editions) constitutes a major challenge to the male medical establishment. The Collective was too busy to contribute a chapter. Their approach is described in, for example, Wendy Coppedge Sanford, "Working together growing together: A brief history of the Boston Women's Health Book Collective," *Heresies*, vol. 2, no. 3 (1979): 83-92.