

BRIAN WYNNE, *Rationality and Ritual: Participation and Exclusion in Nuclear Decision-Making*. London and Washington, DC: Earthscan, 2011. Pp. xxvii+228. ISBN 978-1-84971-161-6. £24.99 (paperback).
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Brian Wynne's classic analysis following the 1977 Windscale–THORP Inquiry was published by the BSHS in 1982 for a specialist readership. That inquiry underpinned the 1978 decision to build THORP for spent-fuel reprocessing, to extract plutonium – a decision reaffirmed in 1997 when the Blair government pushed ahead with the MOx plant producing mixed-oxide fuel in order to use up the accumulated plutonium. Now that the THORP reprocessing decision has proved a technology policy disaster, Wynne's analysis has surely gained importance and is well worth this new edition, updated with an additional preface and extensive 'quarter-century retrospect' by Wynne himself.

What Wynne calls the ritual of public authority – from government bodies to the courts – employs scientific reason as the prime actor. Scientific rationality can work both through ritual and as ritual. The latter has intensified, Wynne says, in many areas of public policy since the discussion of it in the 1980s (by Wynne and Toulmin) and its tracing back to the seventeenth century (by Shapin and Schaffer). Any institution needs some capacity for self-delusion if it is to be successful. Ritual allows us to compromise and even accept contradictions. Ritual plays a bigger part when the debate becomes more politicized and polarized.

Collective delusion and bias exist on both sides of the nuclear debate. We have procedures for mediating arguments of the two sides. But what, Wynne asks, of the enthusiastic claims for the definitiveness of the THORP decision compared with its embarrassing reality? Likewise, what of the claims in the first weeks of Fukushima of no 'meltdown' of the stricken reactors? Delusions and inconsistencies are rife when politics is entangled with science. When it is such a costly decision as THORP (or GM crops, etc.), how much self-delusion can society tolerate? he asks.

Defining the public issues becomes problematic when the government makes science an idol rather than an instrument. In defining the nuclear public issues as 'risk' or risk/benefit, the government reduced it to a scientific issue, sidelining equally valid public concerns. The basic presumption is that science is the foundation of public meaning, so they define 'public meanings' as matters for scientific discovery, including – at its lowest – via opinion polling. The sponsoring body engages 'independent' facilitators and frames public consultation around explaining the science and filling in a risk matrix (with ticks or spuriously precise numbers). They explain public scepticism on the 'public-deficit' model, and so conclude a need for greater efforts on publicity.

Such integration of science into governance led to the THORP disaster (and likewise BSE). Radioactive discharges to sea were allowed because of science-backed claims that the radioactivity gets locked up in sediments. Then detections onshore showed that sea-to-land transfer occurs. The leak of eighty-five cubic metres of highly radioactive waste containing twenty tonnes of uranium and plutonium from THORP, undetected for months, was just a technical failing. The fact that science can be (and was) wrong and that regulation can and does fail shows that nuclear industry 'risks' have to be treated as 'public issues'. The government should not brush aside well-justified regulatory and public-trust deficits by shouting that the UK operates to the highest standards (unlike Japan, of course).

Gordon Mackerron's preface endorses Wynne's theses on the 'public-deficit' model and the 'deletion of publics as democratic agents'. He argues that Wynne's study influenced the Committee on Radioactive Waste Management (CoRWM) that Mackerron chaired, which provided the cover for the government's choice of underground burial ('geological disposal') of nuclear waste, as needed for its decision on new nuclear power stations. CoRWM was required to 'inspire public confidence', so not to rely on the scientific consensus in favour of deep burial, and was to take public engagement as central.

Mackerron claims that CoRWM was successful in sidelining the technical arguments and engaging the public on framing the issues and scoring defined objectives. Yet the pro-nuclear management forced on the committee produced much one-sided technical information and manipulated the public involvement. They reduced the intended deliberative and rational discourse (Ortwin Renn's collaborative-discourse model) to a scoring exercise in multi-criteria decision analysis. The engagement was a failure as I (and to a lesser extent the assessor) concluded (see 'Disposing of Britain's nuclear waste: the CoRWM process', at direct.bl.uk/research/30/43/RN230234692.html). Mackerron blames the government for misusing CoRWM's report as justifying the burial of 'new nuclear' waste (from new nuclear plants) as well as legacy waste, but their report was open to misuse. CoRWM opted to exclude issues around new nuclear waste and declared that deep burial is the 'best available' solution. Yet it is not available – R & D would take many years and may not prove to meet technical standards over the huge time frame. Evidently, ritual also dominated rationality in the 2003–2006 nuclear waste disposal process to a greater extent than Mackerron admits.

A sceptical risk analyst views Wynne's critique as really about symbolic politics of the nuclear power debate; the technical shortcomings of nuclear technology are convenient for his argument, but his concept of lay publics is romantic and unsubstantiated.

Brian Wynne concretely says that his key criticism of nuclear power at the 1977 inquiry and in his 1982 book was that it failed to demonstrate the separation of military from civil nuclear endeavours. An analogous failure prevails today in connection with terrorist attacks and with proliferation of nuclear knowledge/materials – since the government defined these as risk issues, to be decided by the Office of Civil Nuclear Security, and not subject to debate.

Brian Wynne makes a final plea for a more sceptical, pluralistic and reflexive social culture. But he sounds a note of realism in the nuclear area, admitting that social credibility is unachievable for a technology that requires development and control institutions that are both socially remote and almost impossible to insulate from accumulating self-delusion.

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