

misunderstandings, may be the most direct means by which science has impact on public culture.

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HARRY COLLINS and ROBERT EVANS, **Rethinking Expertise**. Chicago and London: University of Chicago Press, 2007. Pp. 160. ISBN 978-0-226-11360-9. \$37.50 (hardback).
doi:10.1017/S0007087409990185

Brave are the authors who proclaim in their final chapter that most of their book has been dedicated to showing ‘how we might think about what it means to “know what you are talking about”’ (p. 114). For sociologists Harry Collins and Robert Evans, the people who know what they are talking about are ‘experts’. This is surely a very familiar social category for recent followers of trends in science and technology studies. Collins and Evans present a new theoretical taxonomy of experts’ most distinctive attribute, ‘expertise’. The analytical and classificatory enterprise of this book might remind some readers of Ian Hacking’s *Social Construction of What?* (Cambridge, MA, 1999). That work brought welcome clarity to the muddled pluralism of social constructivism. The periodic table of expertise offered by Collins and Evans is designed to perform a similarly elucidatory role by mapping the dispositions, specialist expertises, meta-expertises and differentiating meta-criteria that lurk unarticulated in the quotidian operation of expertise. Captured neatly into one of (too) many two-dimensional diagrams that mark this volume, this scientific tabulating enterprise is clearly aimed at a community much broader than scholars of science and technology studies.

As Collins and Evans see it, their most important innovation is to differentiate between two kinds of expertise, ‘contributory’ and ‘interactional’. Roughly, the former is the allegedly ‘real’ expertise uniquely possessed by a privileged elite who have the know-how to contribute substantially to technical decision-making. This notion is evidently the descendant of the ‘core-set’ in Collins’s book *Changing Order: Replication and Induction in Scientific Practice* (London, 1985), where it described the powerful elite that (putatively) decides authoritatively how to deal with dissent or uncertainty by overruling it. Revising that crudely power-laden view, the authors now recognize that a broader group of critics and advisers possess a different form of expertise, the interactional form. Although unable to do the technical job of an ‘expert’ themselves, this constituency can and does engage in a productive dialogue with the conventional experts by suggesting alternative interpretations and critical evaluations.

Anticipating criticism that this dichotomy is overly sharp, Collins and Evans admit that there are some problems in specifying a determinate boundary between contributory versus interactional forms of expertise. To explore this issue, they borrow from Collins’s published case studies on gravity waves and parapsychology and from Herbert Dreyfus’s phenomenological account of embodiment relations. They also draw on their own empirical research on socialization effects in colour blindness and perfect pitch. Given the ahistorical treatment of these case studies, this slender volume might not be to the tastes of all historians of science. And even those who have followed with interest Collins’s earlier work will find it not a little surprising that the erstwhile zealot of the Empirical Programme of Relativism (as he called it in *Changing Order*) has now discovered and converted to a novel kind of realism. Collins and Evans are explicit at the outset in adopting the view that expertise is a ‘real and substantial possession of groups of experts’ and that individuals become experts in virtue of the competencies that permit membership of such groups (pp. 2–3). This is in opposition to the relativist ‘attributional’ model of expertise that defines experts solely in relation to others who are deemed less expert. Specifically, the book is motivated by a rejection of one well-known example of the relational approach, Brian Wynne’s thesis about the importance of ‘lay expertise’ in challenging and correcting the misjudgements of

formal scientific expertise. Wynne's celebrated, indeed canonical, study illustrated how sheep farmers in 1986 post-Chernobyl Cumbria knew better than government scientists how to mitigate the effects of radioactive fallout on grazing sheep. Ever since then, Wynne has successfully promoted the right of the laity to disrupt the autonomy of the scientific elites so vigorously cherished by Collins and Evans.

A concluding appendix presents a larger *longue durée* perspective in which the approach advocated in the body of the book emerges as part of a mature 'third wave' of science studies. We learn that the earlier, iconoclastic second-wave approach, which advanced the sociology of knowledge, exploited technical uncertainties in science to support radical theses of evidential underdetermination. By contrast, the new successor project engages in the apparently more grown-up endeavour of working out how, in practical terms, people should actually act when faced with such uncertainties. In their fifth chapter Collins and Evans accordingly declare that they are not interested in solving the political problem of legitimacy – the problem, that is, of deciding 'who should be entitled to contribute to the fraught business of technological development'. Rather they consider the more conservative 'question of extension': how to set boundaries and limits to the contributions of non-expert expertise to decide such matters. Their conclusion is that only those who really 'know what they are talking about' should be able to contribute, but the authors are at least prepared to include bearers of both contributory and interactional expertise in the discussion.

Will historians of science be swayed? I suspect their sympathies will remain with Wynne's attempts to reconstruct how expertise is deployed in practice, no matter how unexpectedly and rebelliously inconvenient this turns out to be for the preconceptions of sociologists. In any case, historians unmoved by Collins and Evans's normative project of policing expertise should instead head for the most erudite footnote one could ever hope to read on the operation of the mythical BBC radio game 'Mornington Crescent' (p. 129). Here readers will be able to gauge for themselves whether the authors really do have a clue what they are talking about.

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MASSIMO MAZZOTTI (ed.), **Knowledge as Social Order: Rethinking the Sociology of Barry Barnes**. Aldershot: Ashgate, 2008. Pp. xi + 184. ISBN 978-0-7546-4863-5. £50.00 (hardcover). doi:10.1017/S0007087409990197

This collection of eleven essays is to honour Barry Barnes both on his retirement from the University of Exeter and on forty years' association with the Edinburgh Science Studies Unit. The generative quality of Barnes's work is exemplified beautifully in the temporal and geographical spread of the contributors, many of whom were at some stage members of the by-now legendary Edinburgh unit; or if they were not, are first- or second-generation comrades-in-arms in the broadly conceived sociology of scientific knowledge (SSK) agenda.

Mazzotti's introductory essay offers a helpful short overview of the emergence and growth in the early 1970s of this agenda, with its novel view of knowledge in general and scientific knowledge in particular. Mazzotti describes Barnes's central role in these developments, providing a summary of the corpus of his work and pointing out the intellectual resources he drew upon – along the way providing a genealogical mapping of the field. Although Marx has his place in the account, it is disconcerting to note that none of the other influential Marxist historian-sociologists of science – one thinks of Franz Borkenau, Henryk Grossman, Boris Hessen and Edgar Zilsel – are mentioned. Following this historical opener we encounter a set of contemporary explications and elaborations, featuring David Bloor and Trevor Pinch on the meaning and role of methodological relativism (a principal tenet within SSK), and a concise exercise in scathing irony by Harry Collins. Under the cloak of a discussion of hoaxes, Collins takes on the