

BOOK REVIEW

Jeremy Howick, *The Philosophy of Evidence-Based Medicine*. Chichester: Wiley-Blackwell (2011), 248 pp., \$61.95 (paper).

The phrase “Evidence Based Medicine” (EBM) refers to attempts beginning in the 1990s to incorporate two things into routine medical practice. The first, as the name suggests, is the use of evidence: more exactly, the explicit and critical use of current best evidence when making clinical decisions. This means that practitioners are expected not only to know what the latest studies say but to evaluate those studies, to compare them against each other, and through this evaluative process to arrive at a particular clinical decision. The second thing EBM seeks to bring to medical practice is an emphasis on a certain kind of evidence: that is, evidence as to whether treatments actually do work, as opposed to evidence as to how they work or ought to work. The evidence favored by EBM thus comes from epidemiological studies, which fundamentally involve the comparison of at least two groups of real live people (Alfredo Morabia, *History of Epidemiologic Methods and Concepts* [Basel: Birkhauser, 2004]).

Jeremy Howick has written the most comprehensive and fair philosophical treatment of EBM to date. Howick understands that EBM is not, first and foremost, a philosophical position, and that its various components (e.g., evidence hierarchies) are not primarily philosophical theses. Rather, they are attempts to improve the efficacy of medicine. This book identifies the philosophical interest of EBM’s pronouncements and does not shy away from criticizing them, but it does so in a manner that is thoroughly informed by the goals and practice of EBM.

The simplest illustration of this virtue of the book is the wealth of examples it contains (for these alone the book would be worth reading, and philosophers love examples). This is very definitely a philosophical book about medicine, and not a philosopher’s vision of what medicine might or should or in principle could be like.

Moreover, this is definitely a philosophical book about medicine, and one that focuses on primarily on epistemological problems. (Ethical questions are discussed, but, in these cases, epistemological difficulties are usually identified as the source of the ethical difficulties.) The book approaches its topic with the tools of mainstream analytic philosophy of science. There is—as there must be—some history of EBM in the book, but the treatment of EBM is properly philosophical and not conducted through a historical lens.

These are all general merits of the book, which make it refreshing, stimulating, and well worth the reading time of Joe the Philosopher of Science

(not to mention Joe the Doctor). In addition, the prose is clear and lively. This, in short, is an exciting and a useful book that deserves to be widely read.

It is also a book with flaws. They are not such as to vitiate the project, but they are worth noting, if only because they show how difficult it is to provide a treatment that is at once thoroughly engaged and thoroughly philosophical.

The main flaw in the book is that, in a number of places, the philosophical discussion does not go deep enough. Many philosophers of science espouse greater engagement with science, and Howick is to be commended for making a much more serious effort than is usual to actually engage with medical practice, especially through the use of examples. However, the ideal of a treatment that is at once thoroughly engaged and thoroughly philosophical remains elusive.

For example, in chapter 3 we are told that the principle of total evidence is self-evident. This is startling in itself (suggesting that we need not look for further evidence when weighing up the very principle that, applied otherwise than to itself, urges us to do just that), but it also leads to a missed opportunity in relation to EBM. A more thorough discussion of the basis of the total evidence principle is warranted by the fact that EBM appears to recommend violating it: this occurs, for example, when medics are advised to stop reading on discovering that the trial being reported is not randomized. There is an interesting question about how EBM handles the principle of total evidence: is it in tension with that principle? I would have really liked to see this discussed, but the point was missed.

The discussion of confounders in chapter 4 is another example of a missed opportunity. The definition of confounding relies without sufficient criticism on a source and includes the claim that a confounder is “unrelated to the experimental intervention” (35). But in confounding by indication, the threatening possibility is that the disease in question causes both the prescription of the treatment *and* the outcome under investigation as a potential effect of the treatment. It is true that confounding by indication ought never to arise for an “experimental intervention,” that is, an intervention made for no other reason than that the experimenter so decided (including cases in which the experimenter decides to follow the dictates of a fair coin or a table of random numbers, or whatever). But then the definition of confounding suffers from the simple defect of being defined only for experimental contexts, and not for what are commonly known as observational studies, in which the experimenter does not intervene to introduce the putative causal factor, but rather studies it as it occurs for whatever other reasons. The point here is that a deep and careful philosophical discussion of confounding would have been extremely interesting and useful in this context. Confound-

ing is not a simple concept, even if the contrary is sometimes implied, and a philosopher is well placed to shed light on it.

Again, in chapter 5 we are treated to some fascinating evidence to the effect that adherers to a treatment program tend to do better than nonadherers, whether they are found in the treatment or the control group; but we are later told that randomized controlled trials are controlled by definition, because they “all involve comparing the experimental therapy with a control therapy” (45). This cannot be right, because controlling implies more than just comparing. Suppose I want to know whether lectures that use Powerpoint are more pedagogically effective than those that don’t. I start by looking at the results of my students whom I have lectured with Powerpoint, but on their own they tell me nothing, since for all I know, lectures without Powerpoint would have been more effective. Accordingly I deliver the same lecture series, concurrently, at home to my attentive but dim Rhodesian Ridgeback dog, whom I gave the same test to, at the end of the semester. I have made a comparison, but in no reasonable sense have I introduced a control by lecturing my dog. Thus, a controlled trial necessarily involves a comparison between treatment and control groups, but mere comparison is not sufficient for a trial to be controlled. The point is important for EBM because there is a live question as to whether randomization can do the job of actually controlling the values of potentially confounding variables. Indeed it was this question that first attracted significant philosophical attention to EBM (in John Worrall, “What Evidence in Evidence Based Medicine?” *Philosophy of Science* 69 [2002]: 316–30). Far from being a tautology, “randomized controlled trial” is arguably a contradiction, because controlling potential confounders is not the same thing as trusting, first, that a random distribution of actual confounders has been achieved by a random allocation process, and second, that a random allocation achieves the same effect as actually controlling confounders. There is a real and interesting philosophical issue here that could have been further explored.

These are examples of the sorts of reservations that, for me, arose in several chapters of the book. But they should not obscure the merits of this valuable book, and in particular the points in which philosophical opportunities are properly taken advantage of. For example, the argument in chapter 6 that double blinding does not always increase the quality of a trial is a great example of a proper philosophical argument with important practical consequences. So, too, is the discussion of placebo in chapter 7. “Placebo” is a much more complex notion than usually supposed, and Howick exposes it as such, arguing convincingly that placebo controls are “best conceptualized as treatments in their own right” (82). Again, the discussion of EBM stance on “mechanistic” reasoning is a refreshing rebuttal of the currently vogueish idea that practically any scientific endeavor can be stuck with a label

bearing the word “mechanism”—whether the topic is explanation, evidence, reasoning, or something else again. Whatever the applicability of this idea in neuroscience, the rise of the EBM movement (ironically almost concurrent with the appearance of the mechanistic rash in philosophy of science journals) is in exactly the opposite direction. Howick shows this convincingly, and moreover shows that, with certain qualifications, the dismissive EBM stance on “mechanistic reasoning” is correct.

Generally, arguments going in this direction—from philosophical analysis to methodological recommendations—are satisfying. My concerns lie rather in the lack of influence the other way: the lack, that is, of discussion of philosophical problems in their own right. Philosophy of science at its best does not merely resolve methodological puzzles or confusions for the sciences: it also gives rise to new and interesting philosophical problems, and new twists on old philosophical problems, such as the problem of induction, the nature of causation and explanation, and so on. There remain plenty of further opportunities for this sort of two-way traffic between philosophy and the health sciences, especially concerning the nature and significance of evidence, and the nature of the causal facts under study.

This is, as I have said, a useful and an exciting book, and it deserves to be read for what it will teach philosophers about the way that philosophical problems, especially epistemological ones, arise in the health sciences, even if the treatment of these problems as problems in philosophy, as opposed to problems in the methodology of EBM, is at times less than completely satisfying.

ALEX BROADBENT, UNIVERSITY OF JOHANNESBURG