



DEBATE

A response to Sestini's (2011) response

Maya J. Goldenberg PhD

Assistant Professor, Department of Philosophy, University of Guelph, Guelph, Ontario, Canada

Correspondence

Prof. Maya J. Goldenberg
Department of Philosophy
University of Guelph
Guelph
Ontario
Canada N1G 2W4
E-mail: mgolden@uoguelph.ca

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Against Sestini's allegation that I missed the purpose of his essay [1], which was to improve evidence-based practice by way of emphasizing clinical expertise, narrative medicine, and the shared goal between patient and provider of asking and responding to answerable questions, I insist that I understand and support those goals but still contend (as I did in my commentary [2]) that evidence-based medicine (EBM) is not as amenable to these corrections as Sestini proposes. Furthermore, his foray into philosopher of science Karl Popper's model of conjectural knowledge does not provide, as Sestini suggests, the theoretical underpinnings for improved evidence-based practice.

Sestini tried to parallel EBM and Popper's philosophy through the demarcation of science and science's democratic ethos [1]. Regarding the former, he points out that EBM recognizes evidence to be fallible. Yet, this characteristic is not helpful for our understanding of EBM or for distinguishing it from preceding medical models, as all science allegedly follows this standard of replacing theories that are disconfirmed by new evidence. The contest is whether scientists practise what they preach or hold onto their beliefs dogmatically. Sestini's conclusion that EBM admits falsification and therefore 'qualifies as a science' [3] is a trivial finding. Furthermore, EBM status as a scientific pursuit was not challenged by me.

Regarding the democratic knowledge pursuit to which Sestini likens evidence-based practice, I previously argued that EBM is not the bastion of democratic science that he presumes [2]. Instead of Popperian science, I paralleled EBM to Kuhnian 'normal science', a far less creative and open-ended pursuit [2]. Sestini objects that he was merely pointing out that the scientific literature is important for EBM [3]. Indeed that is the case, but he does not comment on my concerns regarding the loss of important *critical* appraisal involved when practitioners rely on predigested summaries rather than reading the studies and knowing the literature.

What Sestini calls (my) misunderstanding, I call disagreement. He denies my success in invalidating his thesis that EBM is consistent with Popper's philosophy and then takes separate issue with

my reading of the evidence-based movement as not requiring Popperian 'critical attitude' and 'methodological risk taking'. However, that challenge to evidence-based practice *is* the basis of my rejection of his Popperian thesis. So rather than separate the two, I can repeat and defend my previous conclusion [2] that EBM does not model Popperian democratic and critical science.

However, perhaps I need not quibble over our different readings of Popper's philosophy and our dispute as to whether or not EBM is consistent with a Popperian model of science. Not only are they secondary to our disagreement over the actual practice of EBM (which I address below), but I have already suggested [2] that Popper's theory of conjectural knowledge is unhelpful for the clinical problems that medicine must address with justification. Popper offers no guidance for the scientist faced with choosing between two competing unfalsified theories. This is not only unhelpful, but largely unintuitive. Consider an engineer building a bridge who must choose between two competing physical theories for designs that are stable and supportive of the weight the bridge must carry. One theory is 'tried and true', having been used for the successful construction of several bridges. The other theory is brand new and untested. Should we use the one that has passed many tests or the brand new theory that has never been tested? An empiricist theory of confirmation would support the choice of the former, while Popper does not hold any preference for one theory over the other.

Popper famously avoided the need for a theory of confirmation in science (and its many problems) [4], and so our bridge-building theories are equal insofar as *neither have been falsified*. Popper has nothing to say to the common sense idea that we should rationally choose the theory that has passed many confirmatory tests. This bridge-building example is an illustration of the most common objection that has been raised against Popper's philosophy of science [5]. Popper cannot explain away this odd situation where it seems rational to choose the tried and tested theory rather than the new one. As Popper refuses to admit that when a theory passes confirmatory tests, we have more reason

to believe the theory to be true, both the tested theory and the new untested theory stand as equally reasonable choices. It is because of this problem that I propose that Sestini drops Popper's model of science as a framework for which EBM (or medicine in general) *ought* to strive.

However, more central to this debate between Sestini and myself is our disagreement over the actual operations of EBM. In his response to my commentary [3], he objects to my reading of the evidence-based movement as failing to comply with the open-ended, creative and critical scientific inquiry that Popper identifies with good scientific practice. Sestini cites his own experience as an evidence-based practitioner as indeed encouraging 'free inquiry on the questions to be asked, the searches to be done, and the way the data is evaluated' [3]. This sounds Popperian in spirit, and worthy of support *if* this is how EBM actually operates, but different reports from the ground tell another story. Erich Loewy [6], for instance, characterizes EBM as having a 'straight-jacketing' effect, where practitioners are harshly 'called to the mat' by clinical supervisors when their clinical judgement leads them to digress from preset clinical guidelines because they do not suit a patient's circumstances. This top-down administrative pressure to follow the guidelines wrongly turns guidelines into rigid rules, which of course, are not how clinical guidelines were meant to be applied.

What remains is an empirical question whether or not EBM promotes the kind of critical attitude and open-ended knowledge

pursuit that any scientific discipline *ought* to be promoting. I strongly encourage research into this important question. Any philosophy of medicine (whether 'EBM' or not) that promotes this critical attitude should be pursued. And if reports from the ground are largely negative, efforts should be pursued to make medicine more Popperian in this respect.

References

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