

BOOK REVIEW

The Trials of Homeopathy: Origins, Structure, and Development

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On October 30, 2003, the Robert Bosch Foundation's Institute for the History of Medicine, in conjunction with the Karl und Veronica Carstens Foundation, awarded its first Hans Walz Prize to Michael Emmans Dean, Ph.D., for his historically grounded analysis of the use of the scientific method in homeopathy. Works eligible for the prize are undergraduate or Master's theses, Ph.D. theses, and monographs or extended essays, and, in this case, the submission was Dr. Dean's Ph.D. thesis originally titled: "The Trials of Homeopathy: A Critical–Historical Account of the Origins, Structure and Development of Hahnemann's Scientific Therapeutics, and Two Systematic Reviews of Homeopathic Clinical trials, 1821–1953 and 1940–1998."* The prize is well-deserved.

The Robert Bosch Foundation, located in Stuttgart, Germany, promotes research in the history of homeopathy through its Institute for the History of Medicine. It hopes, through this prize, to extend its research program into the academic environment outside of the Institute. Dean's work was chosen because, apart from its thoroughness and evenhandedness, it is the timely first systematic review of substantially all clinical trials in homeopathy (<300). The health landscape has not been this porous since the late nineteenth century, and a historically grounded work such as this helps to locate homeopathy in the increasingly controversial world of comparing therapeutic interventions using the controlled trial. It is no longer unusual, because of the work of historians of medicine such as David Rosner, to think of history as being directly relevant to health policy.

In this book, Dean aims to provide hard-to-find information on clinical trials on homeopathy to policymakers to justify funding more homeopathy research. The impediments include: inaccessibility (homeopathy has been marginalized almost since its inception 214 years ago); lack of funding for homeopathy research (\$1.5 million total in 1999), and

little research to refer to; that homeopathy is controversial and medical opinion-makers have decided *a priori* that it is biologically implausible; that existing comprehensive reviews are few in number and have only examined whether it is more than a placebo effect; and that useful evidence from homeopathy's history is excluded from consideration. Dean's solution is a historical evaluation of homeopathy, "one which connects homeopathy to its past, and to that of orthodox medicine."

Homeopathy is very difficult to write about for a contemporary medical audience. In an ideal informational world, in which science is unbiased information and scientists and academics are unbiased consumers of such information, it would not be so difficult. Unfortunately, it is painfully obvious that science is biased, consumers of scientific information are biased, and science is routinely used to advance personal political and economic agendas that have nothing to do with increasing the store of generalizable knowledge. The readers of this journal no doubt have some idea of homeopathy, but most policymakers, clinical and research physicians, medical humanists, pharmacists, and others in health care have ideas about homeopathy that range from the completely incorrect (homeopathy is a kind of herbology), to the biased (homeopathy is *a priori* impossible), to no knowledge at all. Most people evince little interest in learning about it. The greatest interest in homeopathy is probably found in the executive offices of hospitals and insurance companies, where pragmatic executives are looking for less-expensive, equally efficacious solutions to resource allocation problems.¹ Economic integration of homeopathy is much more likely than philosophical integration.

There are two ideas in homeopathy that cause many medical "scientists" to shudder. The first is Hahnemann's pharmaceutical technique. It results in medicines that have no molecules of the active ingredients. The second is that Hahnemann ultimately grounded his explanation of homeopathy in *vitalism*, a theory that was pronounced dead by the

*York, UK: University of York, 2001.

biologic and medical establishment in the 1930s when genetics was merged with Darwinism and the physicalist explanation of life began to have some explanatory power.

Philosophically, homeopathy is incommensurate with orthodox medicine because homeopathy is based on an incommensurate theory of biology. Although creative and friendly researchers reach to explain living things in reductionist terms, as emergent properties, as parameters of chaos theory, or as quantum events, among other things, none of these theories “brings home the bacon.” Life and the properties of living things, as well as things with little biologic plausibility (as they understand biology), remain outside their purview.

Dean, aware of these issues, takes the pragmatic approach: What does the evidence say? After providing some definitional material, he focuses on the historical record of empirical evidence that homeopathic preparations are biologically active and their therapeutics are efficacious. This approach respects contemporary standards for evaluating therapeutic efficacy. An authoritative analysis of the commensurability problem is still needed, but Dean establishes that homeopathy has common cause with regular medicine on regular medicine’s own terms, and that alone is a substantial accomplishment.

The book consists of three independent, complementary parts. Part One is entitled “Homeopathy’s Place in the History of Therapeutics.” It describes the intellectual/medical environment in which homeopathy developed; the development of two of its defining characteristics; and Hahnemann’s pharmaceutical techniques and theory of chronic disease. The book also contains an overview of the contemporary homeopathy landscape.

The most interesting things to me in Part One is the placement of homeopathy in the medical theories of the Enlightenment by an historian of medicine. Besides being necessary to develop an understanding of homeopathy, this exposition is important because it illustrates how the philosophical underpinnings of medicine, while rarely articulated or understood by doctors, are just beneath the surface of the day-to-day practice of medicine.

In the five chapters of Part Two, Dean presents the first of his two systematic reviews of prospective clinical evaluations of homeopathy, covering the period from 1821 to 1953. He identifies 45 significant trials and demonstrates that homeopathy, although treated as a prescientific medical nullity in orthodox medical historiography, was sophisticated even in terms of today’s epistemological standards, and contributed significantly to the development of the standards in current use to measure and compare therapeutic efficacy. Of interest to homeopaths and other people will be the thorough description and analysis of the key trials in the nineteenth century; these are trials that are often referred to and rarely described.

Dean explains that a key methodological tool of contemporary attempts to measure therapeutic efficacy, the use of

placebo, was largely developed by Hahnemann and his colleagues and successors. Dean advances the argument that

[s]ingle-blind placebo controls, used in a similar manner today, are shown to have originated independently within homeopathy’s own disciplinary matrix before the first external evaluations. They are the most likely source for the first allopathic placebo-controlled evaluations of homeopathy as well as later placebo-controlled crossover and parallel group experiments.

Dean’s arguments have been challenged by Ted J. Kaptchuk, O.M.D., who pointed out that the mesmerism studies of the 1780s introduced the idea of use of placebo to unveil quackery, and was picked up again in the 1830s and successive decades to unmask homeopathy.^{2,3} Dean argues that the use of placebo was developed internally in homeopathy for measuring therapeutic efficacy before the 1834 trials cited by Kaptchuk. Hahnemann started as early as 1810 to use placebo in case-taking, case-assessment, and case-management. He recognized the need for a washout period as early as 1805, and by 1819 he was suggesting the use of placebo during the washout.

The third part of the book looks at 205 prospective controlled clinical trials performed in the contemporary research environment from 1940 to 1998. Dean finds evidence of homeopathy’s safety and efficacy in trials of high internal validity and its usefulness in areas that are problematic for orthodox medicine. On the basis of the trials he reviews he concludes that homeopathy is clinically relevant and that there are certain conditions in which pragmatic trials of homeopathy versus standard treatment would be useful, for example, in unexplained female infertility, postviral fatigue syndrome, influenza, and atopy.

Although this section of the book is interesting, its importance is related to the attempt to present data that prove homeopathic drugs have biologic and therapeutic effects. Sociologic data show that use of data for this purpose is ineffective.⁴ That is, scientists are not convinced by data. That a significant body of data shows homeopathy is more than placebo is now indisputable.^{5,6} Since homeopathy is a school of medicine, and not an *ad hoc* therapeutic modality or technique, one can conclude that data showing homeopathy is not explainable by placebo are data that go toward confirming the entire school of homeopathy and its claims, not simply that this or that remedy works for this or that disease entity.

Dean’s book is invaluable for many reasons, chief among them being that it collects all available information about clinical trials on homeopathy in one place and places it in a contemporary scientific context.

Included with the book is a CD-ROM [compact-disc-read-only-memory] that contains information on all of the trials considered in the book, including the trials he excluded from the analyses, all trials in which adverse reactions in

homeopathy or control groups occurred, and the methodological quality and clinical relevance scores for the prospective controlled trials.

The independence of the chapters of the book is such that it can be read in the order presented or in reverse order. In the order presented, it is a history of homeopathy and, secondarily, a history of the development of one arm of contemporary standards for evaluating therapeutic efficacy. In the reverse order, the subject is the contribution to science and scientific method, as static concepts, of a school of medicine that predates modern science.

It is when considered as a contribution to medical epistemology that Dean's work takes on an interesting complexity. Philosophers of science distinguish between "science" and "method." Science, in this sense, refers to the metaphysics held by the scientist. For example, the phrase "unity of science," implies there is one physical reality all manifestations of which can be described with the language of physics and mathematics.⁷

Method refers to the ways generalizable and objective knowledge (science) can be developed. It answers the question of how one investigator can replicate or investigate a new idea, observation, or what another has done. This is the heart of experiment, the part of an experiment that can be communicated to others and that confers objectivity on knowledge. "Unity of method" refers to the idea that a proper method functions to develop "true" knowledge, regardless of the science. That is, if two scientists disagree on the nature of reality (science), but they agree on a method by which reliable information about reality can be discovered, they should be able to use the method to mediate disputes about the science, to determine what is "real" or "true."^{7,8}

The foregoing is no surprise to students of complementary and alternative medicine (CAM). What is rarely seen though, is such a clear demonstration of the principle. Looking backward, Dean traces the history of the "gold standard" of measuring therapeutic efficacy, the clinical trial, into the origins of homeopathy, and he shows how the *method* was (and continues to be) used to demonstrate the *science* of homeopathy.

This sets up the philosophical conundrum: Which science is correct, if we agree that the method is sound?

The success of the method also brings into question another dogma of orthodox medical "science," that medical "scientific" knowledge is an ever-moving target, that the orthodoxy of today, generated by the latest randomized controlled trial (RCT) and meta-analysis, is likely to be overthrown tomorrow by the next RCT, *ad infinitum*.⁹ Science is supposed to be about developing statements that have a certain truth value. If the truth value of a statement is the measure of scientific knowledge, then homeopathy has turned out to be more scientific than orthodox medicine. The pharmaceutical and therapeutic statements of homeopathy were made and empirically verified by the method before

the development of the theoretical structure of contemporary orthodox medicine. This calls into question the claims of exclusivity and unity of scientific medicine.

Contemporary physics and chemistry, and contemporary philosophy of science, have moved on from strong unity of science claims, but this is not true in the weak science of medicine. Most living physicians in the west are indoctrinated in the biochemical, neo-Darwinian model of life as a part of a larger unified science of biochemistry and physics. As medical positivists, their methodological claims must be grounded in their understanding of science, which does allow *vitalist* entities.

This analysis also generates the interesting question of what Dean's methodological claims mean for the identity of homeopathy and the homeopath. That inquiry is beyond the scope of this review.

Dean's timeline gives rise to an interesting moral perspective on the entire research enterprise. The institutionalization of the RCT as the gold standard of therapeutic efficacy (1962 in the United States) coincided with the extraordinary rise of funding in the United States for research on human subjects. From 1955 to 1965 funding went from ~\$40 million to ~\$400 million. By the early 1970s it was over \$1 billion. (It now stands at \$95 billion.) At the same time, in the 1960s, the research community became acutely aware of the potential for abuse of human subjects, and careful consideration of the ethical problems of medical research crystallized around Henry Beecher's famous expose in *The New England Journal of Medicine* in 1966.¹⁰ The period between 1966 and the passage of the U.S. National Research Act of 1974 saw a wide ranging and deep analysis of the research enterprise. The criticisms and recommendations made in those years still are relevant today, as, in spite of the Nuremberg Code, the Belmont Report, and the Common Rule, research abuses continue unabated.¹¹ In the name of scientific, economic, and social progress, the RCT has become an instrument that undercuts the professional judgment of physicians and dehumanizes patients.

One of the main insights of those years was the need to offset the incursion into medicine of the dehumanizing affect of the scientific method as an instrument of science and technology. It gave rise to the medical humanities, and theologians, philosophers, ministers, lawyers, historians, sociologists, and other nonphysicians began to meditate and comment on the deficiencies of scientific medicine. One of the main voices of this outpouring of commentary was the philosopher Hans Jonas. He famously questioned the very meaning of the research enterprise:

Let us not forget that progress is an optional goal, not an unconditional commitment, and that its tempo in particular, compulsive as it may become, has nothing sacred about it. Let us also remember that a slower progress in the conquest of disease would not threaten

society, grievous as it is to those who have to deplore that their particular disease be not yet conquered, but that society would indeed be threatened by the erosion of those moral values whose loss, possibly caused by too ruthless a pursuit of scientific progress, would make its most dazzling triumphs not worth having. Let us finally remember that it cannot be the aim of progress to abolish the lot of mortality.¹²

These words cannot be more meaningful now, when only “one in 5,000 compounds tested becomes a product, and only three in ten of these actually make it to market,”¹³ and the financial conflicts of interest are so extreme they are undermining confidence in all medical information. These musings are made all the more stark when the orthodox research program is compared to the history of homeopathy. Homeopathy has been successfully treating disease, using drugs with imperceptible side-effects for 200 years. It, arguably, according to Dean, is the origin of the controlled trial, and yet it is still using the same medicines developed by Hahnemann and his successors in the nineteenth century. Perhaps there is good reason to question whether the gold standard is made of fool’s gold.

This leads to a final observation. There is little money in homeopathic research because there are few opportunities to own the economic monopoly of patent protection for homeopathic medicines, and we live in an age in which the economic model of life is perhaps stronger than the biochemical. Arguably, one symptom of health care system dysfunction is that, in many cases, sick people are factored in as rational maximizers of their resources in the market or as chronic disease annuities, not treated as human beings in need of solace and care. No longer do sick people visit the doctor for medicine, rather they are statistical events treated with other statistical events.

The CAM world is often said to offer a humanistic solution to this misperception about life. Spirituality and other classes in being human are being taught in U.S. medical schools; yet at the same time some CAM policymakers insist on using problematic epistemological tools to evaluate therapeutic efficacy. We should appreciate the thoughtful discussions that are occurring and continue to give careful consideration to the way we construct medicine and how we know what we know about helping people get better.¹⁴

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