



Book Review

Bynum William, *The History of [Western] Medicine, A Very Short Introduction*, Oxford University Press, 2008

In 1982, the historian of medicine, Erwin H Ackerknecht (1906–1988), in his *Short History of Medicine*, (Ackerknecht, 1982) distinguished four periods:

“Hospitals were such a decisive factor in the development of early 19th century medicine that this period might well be characterized as the period of *hospital* medicine, as distinguished from its predecessors, *library* and *bedside* medicine, and its successor which can be called aptly *laboratory* medicine.” (Ackerknecht, 1982, p. 146)

According to Ackerknecht, library medicine had thrived in the Middle Ages, bedside medicine had been practiced and theorized by Hippocrates (460 BC–370 BC), Boerhaave (1668–1738), and Sydenham (1624–1689), and hospital medicine had been theorized by Laennec (1781–1826) and Graves (1796–1853) (Ackerknecht, 1982, p. 170).

In his recent book, *The History of Medicine. A Very Short Introduction*, William Bynum, Emeritus Professor at the Wellcome Trust Centre for the History of Medicine, at University College, London, has added “community medicine” to the four kinds of medicine previously identified by his former mentor Ackerknecht:

“The five kinds of medicine – bedside, library, hospital, community, and laboratory – represent different goals of doctors, as well as reflecting the differing sites in which they work. Although their appearance allows a roughly chronological narrative, these kinds of medicine are cumulative.” (Bynum, 2008, p. 1)

Bynum's book is divided into balanced chapters, each of which draws from a limited number of tableaux, but these are covered with sufficient depth, to cover 2500 years of history in 150 pages without giving the reader the impression that she or he is reading an index or a table of contents.

Look inside

The chapter entitled, “Medicine at the Bedside” portrays Hippocratic physicians as performers of a form of holistic medicine, an approach aimed entirely at the patient as a whole (Bynum, 2008, p. 6). A major implication of holism is that there are no disease entities beyond individual complaints:

“Although Hippocratic writings contain descriptions of many diseases to which we can give modern labels, they never separated the disease from the individual sufferer. Thus, although we can find accounts of diseases we might call consumption (tuberculosis), stroke, malaria, epilepsy, hysteria, and dysentery, these are presented as events that happened to individual people.” (Bynum, 2008, p. 13)

Greek medicine has had three legacies influential to western medicine. Probably the most important is its secular approach to disease, in which there is no place for magic, superstition or religion. Then comes the concept of health as an equilibrium between the four body humors, the influence of which we can trace up to the 19th century. The third Greek legacy is the botanical basis of most drugs.

The chapter, “Medicine at the Library” depicts a period when doctors shared, “a veneration of the medical wisdom of the Greeks, and a desire to base their own medical theories and practices on these ancient precepts” (Bynum, 2008, p. 20). It is then that Vesalius (1514–1564) made his decisive contribution to the study of anatomy. Doctors still used typical Hippocratic remedies such as bloodletting, botanical emetics (to invoke vomiting) and cathartics (to induce purging) (Bynum, 2008), but they explored new sources of treatments, such as the metallurgical treatment of Paracelsus (1493–1541). It was also in that period that Sydenham's experience with Peruvian bark (i.e., quinine) caused him – and consequentially, us – to start departing from Hippocratic holism and view diseases as separate entities, observable in many patients:

“Sydenham's experience with Peruvian bark fundamentally changed his whole concept of disease. Although he was still comfortable with Hippocratic humors, quinine seemed completely to stamp out intermittent fevers, root and branch. It seemed to be a *specific*, dramatically effective against this one disorder in all patients. It encouraged him to believe that diseases could be classified, like botanists classify plants, and that the variation of a disease and its symptoms in individuals was adventitious, like the differences in individual violets or other flowers.” (Bynum, 2008, p. 37)

The chapter, “Medicine at the Hospital” is mostly about the time when French medicine, re-organized after the revolution, established new standards for practice and learning:

“French hospital medicine came to be based on three pillars, none entirely new, but which together constituted a new way of looking at disease. The three pillars were physical diagnosis, pathologico-clinical correlation, and the use of large numbers of cases to elucidate diagnostic categories and to evaluate therapy.” (Bynum, 2008, p. 46)

“Medicine in the Community” reviews the history of epidemics from the plague to smallpox and cholera.

The chapter, “Medicine in the Laboratory” is about the discovery of cells and germs, the contributions of Pasteur (1822–1895) and Robert Koch (1843–1910), the other proponents of microbiology, bacteriology, and their attendant laboratory disciplines. As Bynum notes, interesting research may have been done in the labs, but “its fundamental significance for patients and life expectancies had been exaggerated. What exactly did they find out, and did it matter all that much?” (Bynum, 2008, p. 98).

The final chapter, "Medicine in the Modern World," illustrates Bynum's point that the kinds of medicine reviewed in the previous chapters are cumulative, and that today we find bedside medicine, internet libraries, costly hospitals, behavioral public health and epidemiology, and drug-producing labs. They are all needed to address complex global medical problems such as malaria and HIV-related diseases.

An unfortunate title

I do wonder why the publisher, Oxford University Press, has given the book such an amazingly unfit title. The book strictly covers the history of Western medicine, from Hippocrates to Cochrane. The title, *A History of Medicine* gives the impression that Bynum, besides Hippocratic medicine, covered all ancient, holistic medicine from Asia, Africa, and America, even though several times, he stresses the opposite:

"I have tried to provide a general framework for understanding the history of medicine since the ancient Greeks established what can be called the Western medical tradition." (Bynum, 2008, p. 1)

After all, because it is limited to Western medicine, Bynum's *Very Short Introduction* to the history of medicine may not be that much shorter than Ackerknecht's *Short History of Medicine* (Ackerknecht, 1982). Both books cover all types of Western medicine in a similar way. Bynum's book is more up to date but ignores Middle Eastern, Chinese and Indian learned medicines, all of which are covered by Ackerknecht.

Were the Hippocratics epidemiologists?

I have a couple of gentle remarks related to domains I am familiar with because they pertain, directly or indirectly, to the history of epidemiology. One is about Hippocrates, and the other relates to the tobacco and lung cancer studies of the 1950s.

There have been many unwarranted claims by epidemiologists that Hippocrates is the, "father of epidemiology." (MacMahon and Pugh, 1970; Lilienfeld and Lilienfeld, 1980; Pan American Health Organization, 1988; Lilienfeld and Lilienfeld, 1980; Greenwood, 1935).

I have explained elsewhere that the authors of the Hippocratic treatises could not have been epidemiologists if only because they believed that every health event could be explained by a specific set of causes (Morabia, 2004). No health event occurred by chance. As a result, patients were not enumerated, grouped or compared.

In Bynum's book there is, however, a sibylline paragraph pertaining to this issue, which is not easy to decipher, but that seems to purport this inaccurate vision of Hippocrates as the founder of Western environmental sciences:

"*Airs, Waters, Places* is essentially the foundation statement of Western environmentalism, especially as it relates to health and disease. It offered advice on where to build one's house (well-drained soil, protected from chilling winds), and analysed the health of communities in terms of the environmental factors that impinged on their inhabitants." (Bynum, 2008, p. 14)

I am not sure what is meant by "Western environmentalism." The term has been used to characterize the ecological movement of the defense of the natural resources of the planet (Grove, 1992). But I cannot see why that movement, which is relatively young, maybe a thousand years old, would be related to Hippocratic medicine. Most likely, Bynum refers to environmental health sciences or environmental epidemiology.

If this is the case, the statement is unfortunate, and actually contradicts the statement – quoted above – according to which Hippocratic medicine is holistic.

Hippocratic doctors were interested in environmental and meteorological observations in as much as they belonged to the many factors that could contribute to disturbing the fine balance between the universe and the human body for an individual patient. Arriving at the village to open their clinic, they would pay attention to the season, whether or not there were stagnant waters close by, the direction of the winds, and so on, and they would inquire about how the rest of the year had been in terms of climate and diseases.

Such assessment of the "constitution" of a place provided a context for Hippocratic doctors, which allowed them to interpret each patient's symptoms and clinical history, and develop the most accurate prognostic statement. But they did not, in deep contrast to Western environmental health sciences, attempt to directly relate environmental causes to a specific patient's history.

Air pollution is a telling example because it appealed to both Hippocratic doctors, who were concerned when the air transported miasmata (plural of miasma) causing mass casualties, and modern environmentalists, who are concerned by the toxic particles that contaminate the air we breathe. But the Hippocratic and the modern approach are fundamentally distinct. The treatises attribute to miasmata the deadly epidemic disease capable of killing many people, indiscriminately of their way of life or social background. In these situations, the only resort is fleeing the area or breathing more superficially. The doctors cannot help. It is only when each patient is afflicted by specific symptoms, reflecting an imbalance in their humors, that a doctor is needed to re-establish the proper balance. Such doctors know how to help the positive natural forces in the human body win the fight against morbid and lethal forces. Instead, today's environmentalists endeavor to discover direct links between air pollution, and specific particles comprising it, with asthma, cancer, cardiovascular diseases, and so, in order to prevent these diseases.

Hippocratic medicine is an ancient holistic medicine. It is impossible to directly connect some of its features to modern, environmental health science. The way of thinking about the relation of the environment to population health has started on entirely new foundations after the conceptual revolution of the 17th century, from which a theory of probability and population thinking emerged.

Department of errors

In the second edition, inaccuracies should be corrected in the paragraph about the smoking and lung cancer studies of the 1950s. They need to be mentioned before the book disseminates them too broadly. The problems are in italics in Bynum's text. My corrections are in italics and separated by brackets:

"[Doll and Hill] began work by devising a questionnaire for patients in London hospitals diagnosed with cancer of the lung, liver, or bowel. The initial striking result was that heavy smoking was present in those with lung cancer, but *not in those with the other forms of cancer.*

{*The smoking habits of lung cancer cases were compared with those of non-cancer controls. Other cancers were not used in that analysis. See Doll and Hill, (1950).*}

At the same time, an American study (1950), based on *autopsies of patients dying of lung cancer*, also found a high prevalence of smoking in the victims.

{*Neither Wynder and Graham (1950) or Levin et al. (1950) was based on autopsies. They both interviewed living people.*}

Based on these suggestive findings, [Doll and Hill] devised a prospective study, following the health fortunes of more than 34,000 British doctors who agreed to take part in it.

{*40,000 had "agreed to take part in it" but the 6,000 women were not included in the first reports; it should therefore read 34,000 "male" British doctors.*}

(Bynum, 2008, p. 143)

Moreover, it does not even hold true that, “the initial striking result was that heavy smoking was present in those with lung cancer, but not in [the controls].” Among men, the proportion of heavy smokers (50 cigarettes per day or more) was 5% in lung cancer cases and 2.1% in non-cancer controls. Would you say this is striking? Worse, 95.8% of the non-cancer controls smoked cigarettes and pipe, slightly less than the 99.7% of lung cancer cases. Instead, Bynum could have mentioned the methodologic tour de force of [Doll and Hill](#) consisting in computing risk ratios after having extrapolated the control data to the population of Greater London; an average smoker had 14 times the risk of lung cancer than a non-smoker ([Doll and Hill, 1950](#)). The risk ratios were far more impressive than the prevalence of heavy smoking.

For whom is the book for?

I have cited sections of Bynum's book at length because he writes beautifully and delivers his messages in short, efficient sentences, often with a good sense of humor, as when he writes about Pasteur:

“Pasteur got the better of his opponents. He always had the most amazing knack of backing the right horse, and sticking to his guns.” ([Bynum, 2008, p. 99](#))

I recommend the book to everyone interested in the topic, whether an experienced historian, a student in medicine or simply a curious mind. Though I expect the second edition to be even better than the first.

Conflict of interest statement

The author declares there is no conflict of interest.

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Alfredo Morabia

*Center for the Biology of Natural Systems,
Queens College—City University of New York,
163-03 Horace Harding Expressway, Flushing, NY 11365, USA*
Corresponding author. Fax: +1 718 670 4165.
E-mail address: alfredo.morabia@qc.cuny.edu.