

BOOK REVIEW

Algorithms, intuition, evidence and the zebra

SANJAY A PAI

Consultant Pathologist and Head, Pathology and Laboratory medicine, Columbia Asia Referral Hospital Yeswanthpur, Malleswaram, Bangalore 560 055 INDIA email: sanjayapai@gmail.com

Jerome Groopman. *How doctors think*. New York: Houghton Mifflin; 2007. 307 pp

By sheer coincidence, while reading the book *How doctors think*, I got into a conversation with a neighbour who believes that all that most Indian doctors do with their patients is "...R and D (research and development). Doctors can never seem to make a firm diagnosis. What's so difficult about it?" He also believes that it is possible for technology to be developed to such an extent that correct diagnosis can be made and appropriate, personalised medicine be practised in the future. My attempts to explain that medicine and, more importantly, disease does not follow a linear, structured pattern have fallen on deaf ears. This, then, is a book for people like my neighbour. It attempts to explain to the layperson the different factors that go into the making of a medical decision, whether in making a diagnosis or for offering therapeutic options.

Jerome Groopman is a distinguished medical oncologist at Harvard Medical School and is also a well known medical writer who has contributed to the *New York Times*. He writes with empathy and I can think of few who are in a better position to than he to write such a book.

Groopman delves into the different factors that can influence the thought process of a physician - keeping an open or a closed mind, dislike of a patient, inter- and intra-observer variability, where one was trained and mentored, overconfidence, thinking outside the box etc. Algorithm based thinking, clinical intuition, evidence based thinking, and zebra retreat (hesitating to make a rare diagnosis) go into a physician's diagnosis and Groopman discusses these elements, with patient histories to illustrate them. The physicians range from internists, oncologists, gastroenterologists and endocrinologists, radiologists to orthopaedics (where the author himself is the patient). Because most physicians are haunted by error - a topic that has been discussed in medical journals, ethics journals, the media and books for the past decade - much of this book deals with this subject. As Dr Karen Delgado, an endocrinologist, who makes many appearances in the book states (page 55), "The hardest thing about being a doctor is that you learn best from your mistakes, mistakes made on living people."

Groopman is also bold and honest enough to tell us about the hidden persuaders—marketing. I shall delve more into this aspect because it is concerned directly with some of the issues

that this journal has addressed in the past. Using the example of companies recommending the use of testosterone in old men, he shows how a new disease can be created out of normal aging process or how operative procedures of unproven significance are routinely performed. Groopman tells us about colleagues who refuse to be swayed by such gimmicks—and contrasts them with those who are believers. The believers are those who have accepted the new thinking—be it because they are truly convinced by the data that is shown to them, or because they are unconsciously swayed by the gifts and research grants that they receive from these same companies. A recent issue of the *New England Journal of Medicine* (NEJM) carries an editorial which elaborates on the various unethical practices that Parke-Davis used to increase the sales of gabapentin (1). No stone was left unturned in their attempt to do so—right from misinforming physicians, to manipulating them, to creating new indications for its use, ghost writing articles, hiding crucial data which showed the drug in an unfavourable light, etc.

How this will change in the future remains to be seen. I understand that there is a voluntary moratorium by the drug industry on small gifts—such as pens, paperweights and flash drives with the company logos—from January 1, 2009. Of course, as with other things pharmaceutical, this will apply only to the USA and not to other countries. Some of us have earlier pointed out that drugs when found to be ineffective or dangerous in the USA have been banned only in that country, but have been sold with gay abandon in the third world (2).

It goes without saying of course that not only will patients be able to appreciate the art and science that goes into the practice of medicine by their physicians, but even physicians will enjoy this book and learn much about themselves and their brethren. Yet another group of people who will learn from this book are medical administrators, for Groopman states on the penultimate page, "Those who see medicine as a business...push for care to be apportioned in fixed units and tout efficiency....Working in haste and cutting corners are the quickest routes to cognitive errors."

References

1. Landefeld CS, Steinman MA. The Neurontin legacy -marketing through misinformation and manipulation. *N Engl J Med* 2009 Jan 8. 360(2): 103-6.
2. Pai SA, Lakshmi PK, Rao BC, Sahni P. Pharmaceutical companies and the third world. *Lancet* Mar 29. 2003; 361(9363):1136-7.