

# Medical Decision Making

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**Book Review: How Doctors Think, by Jerome Groopman. Boston: Houghton Mifflin, 2007, 307 pages. ISBN: 0-618-61003-0, and How Doctors Think: Clinical Judgment and the Practice of Medicine, by Kathryn Montgomery. Oxford (UK): Oxford University Press, 2006, 246 pages. ISBN: 0-19-518712-1**

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***How Doctors Think.*** By JEROME GROOPMAN. Boston: Houghton Mifflin, 2007, 307 pages. ISBN: 0-618-61003-0.

***How Doctors Think: Clinical Judgment and the Practice of Medicine.*** By KATHRYN MONTGOMERY. Oxford (UK): Oxford University Press, 2006, 246 pages. ISBN: 0-19-518712-1.

These 2 books take very different approaches in exploring how clinicians think. One book (Groopman's) is written for a lay audience, whereas the other book (Montgomery's) could possibly be enjoyed by lay readers or perhaps medical students, but it is aimed at readers in the medical humanities. The 2 books overlap very little, aside from sharing a title.

Groopman, a staff writer at *The New Yorker* and professor at Harvard Medical School, states that his purpose in writing was to educate patients and their families so that they can ask the right questions and help their physicians to think better about their cases, thereby reducing the frequency and severity of medical errors (p 7). The bulk of the book consists of numerous anecdotes and interviews with other physicians. Most of the anecdotes center on extraordinary, atypical cases; medical mysteries; and diagnostic mistakes.

On the positive side, Groopman is clear that doctors need to be aware of their own cognitive errors and that not enough emphasis is placed during medical training on the role of biases in medical mistakes. He also writes that doctors rarely examine why diagnoses are missed—why heuristics fall apart and cognitive errors occur (p 125). He offers some interesting advice to doctors about communicating with radiologists, such as making sure to give a full history (p 193). There is also a good section on the role of marketing and money in medical decision making, in which he covers disease-mongering and medicalizing normal human processes such as aging.

Although Groopman is clear on the existence of biases and cognitive errors, he rejects most of the tools that are currently in use to aid in clinical decision making, such as patient templates and decision trees, claiming they increase the risk of cognitive errors because the doctor's mind is busy "filling in the blanks" instead of carefully considering all the options and possibilities (p 98). He also does not think much of practice guidelines, clinical decision trees, clinical algorithms, or evidence-based medicine. He contends that these decision-making tools are not useful because they discourage doctors from thinking independently and creatively (p 5, 100). In

fact, he claims that even their proponents concede that these tools are not practical or realistic (p 7).

The cognitive errors discussed include the following:

- representativeness error, thinking guided by prototyping (p 44);
- attribution error, when patients fit a negative stereotype (p 44);
- affective error, or the tendency to prefer what we hope will happen (p 47);
- availability, judging an event's likelihood by how readily relevant examples come to mind (p 64–5);
- confirmation bias, confirming what you expect to find and ignoring contradictory information (p 65);
- anchoring, quickly latching onto a single possibility (p 65);
- zebra retreat, the tendency to shy away from unusual diagnoses (p 126–7);
- diagnosis momentum, passing an incorrect diagnosis from one doctor to another (p 128);
- search satisficing, the tendency to stop searching for a diagnosis once one is found (p 169); and
- vertical line failure, thinking inside the box (p 170).

These are all areas that have been researched and publicized by members of the Society for Medical Decision Making (SMDM), some of whom are cited appropriately. None of the errors are explored in any depth, nor are there any connections or comparisons made between these errors. For example, what types of the cognitive errors described by Groopman are the most common? What factors could predispose physicians to these errors? Are some specialties more prone than others to particular kinds of errors? Why are the least accurate radiologists the most confident of their diagnoses? Groopman does not provide any information that might be useful for either physicians or patients to reduce the frequency of such errors, instead seeming to believe that clinical intuition is the answer.

I do not recommend Groopman's *How Doctors Think*. It is intended for a lay audience, and perhaps a layperson might learn something, but I do not think the book would be useful or entertaining for most members of the SMDM.

Kathryn Montgomery's version of *How Doctors Think* is a very different kind of book. Montgomery is the director of the Medical Humanities and Bioethics program at Northwestern University and holds a PhD in English literature. As a "licensed trespasser" in the clinical world (p 6), she has an interesting perspective on medicine. The premise of Montgomery's book is that medicine is not a science but is instead a learned,

rational, science-using practice. The problem, in her view, is that it is dangerous to assume that medicine is a science—it leads to the expectation that physician knowledge is “invariant, objective, and replicable,” but because of the nature of human biology, medicine can never be positivist, reliable, replicable, or certain (p 16, 40).

This main point is spun in a number of different ways. Montgomery believes that the old art-science dichotomy is ill-defined, “slippery,” and false—that it neglects medicine’s character as a practice (p 30). As a practice, medicine depends on the concept of *phronesis*, a “practical reasoning” described in Aristotle’s *Nicomachean Ethics*. For her, medical practice is “far more than a body of scientific knowledge and a collection of well-practiced skills . . . it is the conjunction of the two: the rational, clinically experienced and scientifically informed care of sick people” (p 33).

Montgomery draws parallels between clinical judgment and judgment practiced in law, ethics, and history. She makes the point that diagnoses are called “opinions,” an “interpretive negotiation of signs and symptoms and their development over time. The goal is narrative coherence and a diagnosis that accounts for all the evidence” (p 32). She also discusses artificial intelligence, saying that it would be impossible to create a diagnostic machine to replace physicians, even with the best artificial intelligence, but she does not refer to recent artificial intelligence literature that retracts this goal. In Montgomery’s view, computerized diagnostic aids are useful only in the hands of an already skilled clinician and can never be a substitute

for clinical judgment. This seems a strange assertion to me—does anyone actually say that diagnostic aids can be substituted for judgment?

Montgomery believes that clinical judgment is not widely celebrated because of the fear that doing so could be perceived as disregarding evidence and science (p 34). Yet she provides no citations to back up this claim. She also believes that physicians continue to refer to medicine as a science for 2 reasons: because they are as unhappy with uncertainty as their patients are (so it is a kind of wishful thinking) and because of the strong prohibition against anecdotal thinking, even though most medical education (according to her) consists of case-based learning: “Case narratives are the principal means of thinking and remembering in medicine” (p 46).

I found this book to be interesting but repetitive. Montgomery writes in a literary criticism style, which is fairly difficult to parse at times. Frankly, the book would have been better as a journal article—it seems stretched quite thin in places, as she re-treads trodden ground a number of times with only minor changes in theme (and in fact, most of the chapters were originally published as journal articles). I think SMDM members would gain some new perspectives from the book, but the main message could probably be understood by just reading the introduction.

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