informative one for an adult psychiatrist like me. The authors point out at the beginning of this chapter that children in foster care are among the most disturbed young people in the country (p. 133). The chapter focuses on a systemic approach to foster care. It is emphasized that foster care has unique features, such as involving two families (the biological and the foster ones) and two sets of agency "employees" (the professional staff and the foster family members). The authors outline the basic ideas of their ecological model and the training of all those involved in foster care. Again, the chapter is "illustrated" with interesting clinical cases. Chapter seven, "The mental health of children," focuses on implementing systemic and family approach into the mental health care for children and adolescents—for instance the introduction of families and family oriented approach to psychiatric hospitals and wards (again, using clinical examples). The second part of this chapter focuses on mental health systems, the organization of training experience, and the training of case managers. The last chapter, "Moving mountains," provides a summary of the factors that maintain the basic elements of family-based services.

This is an interesting book written by authors devoted to the systemic and family approach to mental health and substance abuse care. It emphasizes a very important part of the care for the poor—the work with their families. The book would be appreciated by all those taking care of mentally ill, poor patients, those treating foster children, and those involved in substance abuse treatment/management. Thus, this book should be read not only by social workers and a few psychiatrists really interested in family approach and family therapy, but by all psychiatrists working within community mental health centers system and by all administrators of these institutions and mental health policymakers.

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How Doctors Think. By Jerome Groopman; Houghton Mifflin Company, New York, New York; 2007; ISBN 978-0-618-61003-7; $26 (hardcover), 307 pp.

How do doctors (and, actually, others) really think? We wish we really knew. It is a very interesting and important question for all of us—patients and physicians. A sound bite about physician's decision making one hears frequently is that, on average, a physician will interrupt a patient describing her/his symptom within 18 seconds. As has been also pointed out, physicians frequently make a diagnosis and a decision about treatment in a similarly short time. These decisions are correct many times, but could be wrong, with serious consequences at times. So, one may ask, how do physicians make these decisions so quickly, what is going on in their mind? Jerome Groopman, who has become a philosopher and a commentator on some aspects of modern day medicine (see 1, 2) is trying to analyze, elucidate and answer this question in his newest book, *How doctors think.* His book is not, as he points out, about every aspect of thinking, but " . . . about what goes on in a doctor's mind as he or she treats a patient" (p. 3). He emphasizes that the approach to the physician's way of thinking and decision-making has been changing. His generation "was never explicitly taught how to think as clinicians" (p. 4). Nowadays, medical students and residents are being taught to follow preset algorithms and practice guidelines in the form of decision trees to establish a more organized structure in thinking and decision making (p. 5). This approach is being touted by administrators, senior staff, and insurance companies. It is "thinking within the box." As Groopman suggests, "clinical algorithms can be useful for run-of-the-mill diagnosis and treatment, . . . but they quickly fall apart when a doctor needs to think outside their boxes, when symptoms are vague, or multiple and confusing, or when test results are inexact" (p. 5). Then the questions arise—How do physicians think in those situations? Do different physicians think differently? Are different forms of thinking more or less prevalent among different specialties? How does a physician's thinking differ during routine visits versus times of clinical crisis? Do physician's emotions—his/her like or dislike of a particular patient, his attitudes about the social and psychological makeup of his patient's life—color his thinking? All these and other questions spawned not in my mind, but in Dr. Groopman's mind and he decided to explore them. An important caveat though: he quickly realized that "trying to assess how psychiatrists think was beyond my abilities" and thus this book does not deal with the way psychiatrists think.

The book consists of ten chapters that go through various disciplines and are usually based on and illustrated with excellent clinical cases. The first chapter, "Flesh-and-blood decision-making," points out that attending physicians who teach trainees to perform "a calm, deliberate, and linear analysis of the clinical information" usually themselves do not think that way when encountering emergency patients. Cognitive science points out that, "The mind acts like a magnet, pulling in the cues from all directions" (p. 35). An expert clinician typically forms a notion of what is wrong with the patient within twenty seconds (p. 34). Dr. Groopman points out that to develop hypotheses from a very incomplete body of information, doctors use shortcuts called heuristics (p. 35). The second chapter, "Lessons from the heart," discuses the errors that could arise due to various aspects of our thinking during quick analysis and decision making. He discusses the representativeness error (when thinking is guided by a prototype and one fails to consider possibilities contradicting the prototype), attribution error (when patients fit as negative stereotype), and affective error (when one's thinking is colored by the feelings about the patient, and the fact that we value information that fulfills our desires) too highly. The third chapter, "Spinning plates," expands on classical cognitive errors and focuses a bit on

thinking in the emergency room environment. Dr. Groopman elucidates on patterns of thinking or cognitive errors, such as "availability" (tendency to judge the likelihood of an event by the ease with which relevant examples come to mind—e.g., many clinical examples the physician has seen recently), "confirmation bias" (confirming what one expects to find by selectively accepting or ignoring information). He also cites an emergency room physician who "emphasizes to his interns and residents in the emergency department . . . that they should not order a test unless they know how that test performs in a patient with the condition they assume he has."

The fourth chapter, "Gatekeepers," deals more with thinking in primary care and pediatrics. The chapter starts with a great descriptive comparison of what primary car medicine is like—like when watching a train, "You are looking for one face in the window. Car after car passes. If you become distracted or inattentive, you risk missing the person. Or if the train picks up too much speed, the faces begin to blur and you can't see the one you are seeking" (p. 77). Dr. Groopman discusses the way of thinking in primary care under time constrains. But he also reminds us about the arrogance, ignorance and narrow vision some research and business people have about primary care. As he writes, the role of the primary care physician and his thinking are much more complicated than we think—" . . . the higher we go on the scale of a specialist training, the *less* the medical problem becomes" (p. 98). Thus the notion of some eminent academicians that "anyone can take care of patients" is wrong (p. 97). The following chapter, "A new mother's challenge," moves to the thinking in the ecology of an intensive care unit.

The sixth chapter, "The uncertainty of the expert," moves to the area of experts, in this case cardiology. The discussion evolves about uncertainty of the information we have about many areas and how we arrive at many decisions and what these decisions are based on. Dr. Groopman evokes the so called Sutton's law named after the bank robber William Sutton who, when asked by the judge why he robbed banks, replied: "Because that's where the money is." The discussion evolves about the issues of evidence-based medicine and the fact that we may really lack good evidence even in cases where we believe we have it. One case in point is the closing of a cardiac shunt when there is a two-to-one shunt, i.e., twice as much blood flowing through the right side of the heart as the left. This ratio, which everybody considers evidence-based, was obtained by a vote during a cardiology meeting and the median number was taken as a valid one. This number does not consider any individual variation etc. At the end of this chapter, Dr. Groopman reminds us that we need to acknowledge our uncertainty about many decisions to our patients, and that, "Uncertainty sometimes is essential for success" (p. 155). The seventh chapter, "Surgery and satisfaction," is mostly an autobiographical description of the author's encounter with surgery and his quest for repair of his wrist. Nevertheless, the chapter is filled with some astute observation and caveats. Two examples: One surgeon explained to the author that, "inaction is not at all what is expected from a physician, nor what a physician expects from himself. But sometimes it is the best course" (p. 169); and on talking to patients (quoting another physician), "There is nothing in biology and medicine that is so complicated that, if explained in clear and simple language, cannot be understood by any layperson. It's not quantum physics" (p. 174). The eighth chapter, "The eye of the beholder," moves to radiology. The most fascinating in this chapter is the discussion of a study pointing out that radiologists who performed poorly were also very confident that they were right when they were, in fact, wrong (p. 180). The author of this study also pointed out that, " . . . if you look at a film (radiology one) too long, you increase the risk of hurting the patient"—after about 38 seconds the radiologists in that study began to see things that were not there, began to generate false positives and designate normal structures as abnormal" (p. 180). The point made here is also that radiologists do not follow patients and do not have the opportunity to see and correct things, they have a very short time to evaluate a study. The chapter also makes a point about the fact that "we are victims of our own success—we have so many excellent imaging techniques. Some doctors hardly examine patients or take histories anymore" (p. 192).

The ninth chapter, "Marketing, money and medical decision," touches on the area of the impact of drug companies, marketing, and unrealistic expectations about new medications. As Dr. Groopman reminds us, " . . . studies show that most physicians routinely prescribe only around two dozens drug, and that the majority of these drugs were adopted during their medical training or shortly thereafter, even if that training occurred decades earlier" (p. 219). This chapter also discusses issues such as ethical marketing and ethical practice (e.g., surgical). The last chapter, "In service of the soul," focuses on communication with patients, especially in oncology but also in other specialties. An interesting issue mentioned here is the possibility that "A physician's demeanor and personality often mirror his type of thinking, so there is the potential for self-fulfilling prophecy: particular character types among patients will be channeled to similar character types among doctors, so certain modes of clinical thinking and clinical action will be applied to patients based on their character" (p. 251). The book ends with a thoughtful Epilogue on patient's questions and how to answer them.

Like Groopman's previous books, this is a very thoughtful and thought provoking, well-written volume. It helps us to understand how physicians think. It reminds us that new technologies and new approaches to diagnosis and treatment (e.g., algorithms, guidelines) may not always be the best way to establish the diagnosis and may actually hinder this process. The book is written mostly for the lay readership, because lay people need to understand a bit about the way physicians think and because, "doctors desperately need patients and their families and friends to help them think" (pp. 7–8). Nevertheless, physicians can also learn a lot from this book—How to sharpen their way of clinical thinking,

how to communicate their thoughts with patients, how to improve their thinking via this communication. Unfortunately but understandably, as mentioned before, the way psychiatrists think is not explored here. Hopefully Dr. Groopman can either attempt to handle this area in one of his future books, or maybe psychiatry can find its own Jerome Groopman.

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REFERENCES

1. Groopman J. The anatomy of hope. How people prevail in the face of illness. New York, NY: Random House Inc.; 2004.
2. Groopman J. Second opinions: stories of intuition and choice in the changing world of medicine. New York, NY: Viking Penguin Group; 2001.

Patient Compliance with Medications. Issues and Opportunities. By Jack E. Fincham (with five contributors); Pharmaceutical Products Press, An Imprint of The Haworth Press, Inc., Binghamton, New York; 2007; ISBN 978-0-7890-2610-1; $ 32.95 (paperback), 232 pp.

Compliance with a medication regimen, or more politically correct adherence to a medication regimen, is quite an important part or ingredient of the process of medication use by patients. Compliance or adherence to the medication(s) we prescribe is much more complex and complicated than we all think. The author/editor of this book, Jack Fincham, reminds the reader that, "the prescribed drug that patients can take can be a small part of total drug use by patients. Other drugs taken may include over-the-counter (OTC) drugs, herbal supplements, vitamins, nutritional supplements, and perhaps drugs borrowed from other friends, family members, or perfect strangers" (p. 5). Ideally, we would like patients to perfectly adhere to our prescription regimen all the time. Yet we know that it almost never happens. Thus, we always attempt to check the compliance and attempt to improve it. Jack Fincham states that his book " . . . relates to compliance and patients, and how to improve the former for the benefit of the latter" (p. 5).

The book consists of 12 chapters. The first chapter is a very brief introduction. Chapter two, "Scope of noncompliance and other issues," outlines issues such as drugs, pharmacists, and insurance; self care; self-medication; noncompliance as an alternative; the consequences of noncompliance; factors affecting compliance (e.g., satisfaction with care, age, cost, knowledge of disease, work disruption, income, continuity of the physician-patient relationship, medication errors); dosing; devices to aid patients with compliance; communication; and manufacturers. While the chapter is superficially informative, it also delineates one of the main problems of this volume—its bias. The author states that, "The pharmacist is the focal professional with regard to patient medication consumption. All points lead to pharmacist, so to speak" (p. 11). I hope that this is not the true reflection of the state of the affairs. When I go to the local pharmacy, the pharmacy technician usually asks me whether I would like to talk to the pharmacist. After I (like everybody else) decline, I am asked to sign a nonsensical disclaimer (which I occasionally sign with three crosses), pay my co-pay, and I get the medication and leave. Without talking to the pharmacist. Some may say that this is not the point and that I had my chance to talk to the pharmacist. True, but he/she had his/her chance and wasted it. I do not waste my chance to talk to my patients about their compliance, though. I hope and believe that most physicians do not miss it either.

Chapter three, "Drug therapies leading to noncompliant activity" was written by Jayashri Sankaranarayanan. The author emphasizes that, "measurement of adherence provides useful information that outcome-monitoring alone cannot provide, but it remains only an estimate of a patient's actual behavior" (p. 29), and later adds that, "interpreting adherence rates can be difficult" (p. 37). The chapter reviews medical-condition-related factors; medication-therapy-related factors; patient-related factors; health professional attributes and health system factors. Chapter four, "The cost of noncompliance," starts with the statement that "compliance is often thought (as it should be) in terms of therapeutic success or failure" (p. 63). The author informs us that admissions to emergency departments have been tied to patient noncompliance and that in one study 58% of drug-related illnesses were tied to patient noncompliance across many disease states (sic) (p. 64). The chapter focuses on noncompliance in various illnesses (asthma, cardiovascular, seizures, infectious diseases), populations (elderly) and medications (antipsychotics, transplantation pharmacotherapy) and its possible price.

Chapter five, "Definitions and measurements of compliance," provides the definitions of initial compliance, partial compliance (??), compliance and hypercompliance (" . . . patients takes a prescribed and dispensed medication at a level over and above the recommended and intended dosing interval."), and methods to detect compliance (I'd rather say monitor . . .). Here the author gets back to his biases with statements such as, "It may be wise to exercise caution in considering physicians and their ability to make judgments of their patients' compliance behavior, " or asking "Can physicians be noncompliant?" They certainly can, but this question is not asked about any other health care professional. Chapter six, "Models to evaluate patient compliance," written by Christopher Cook provides "an overview of some of the most important behavioral models that have been used in medication compliance research and presented in the literature" (p. 109). Chapter seven, "Methods to impact patient compliance," focuses on the types of impact on compliance first. Interestingly, the author informs us that, " . . . the integrity and ethical issues surrounding pharmacists reached a wider audience than the pharmacy profession would