Knowledge of the fact differs from knowledge of the reasoned fact. — Aristotle, Posterior Analytics

What, exactly, are physicians up to when they pursue diagnoses and recommend treatments? What do they think they are doing? Suppose a physician is faced with two men in their fifties, each with anterior chest pain. The physician will likely have a definite and fairly standard way of proceeding toward a finding of, say, subacute coronary syndrome in one and gastroesophageal reflux in the other. He or she will be aware of, and will draw from as needed, any number of principles and protocols, algorithms and decision aids, physiologic and psychologic models and ethical frameworks. Any of these elements of practice may be held up by the wider community of medical practitioners to scrutiny, refinement or further trial. As they often are: the practice of medicine is engaged in an endless process of development and self-correction. But it would also be fair to say that medicine has not acquired the habit of reflecting on its own intellec-tual habits. It does not have an articulated theory of itself. Despite the burgeoning of technologic marvels and improved rates of disease detection and survival, it could be that the quip “That’s all very well in practice, but will it work in theory?” poses a valid question for medicine.

In this issue of CMAJ we begin a thought-provoking series of essays by Olli Miettinen. An eminent member of the departments of epidemiology and biostatistics and of medicine at McGill University, and of the department of medicine at Weill Medical College at Cornell University, Miettinen has for many years been an influential figure in the development of epidemiologic theory and of medical research. In these 8 invited essays he provides a critical examination of contemporary medical reasoning and argues that medical practitioners and educators have been mistaken in their presumption that the basic sciences furnish an adequate theoretical underpinning for the practice of medicine. For generations since Osler, medical learning has been organized around a disease- and system-specific framework in the mould of the Principles and Practice of

No mere theory: Olli Miettinen’s “The modern scientific physician”

John Hoey, Anne Marie Todkill
Medicine. But this does not provide us with what Miettinen
describes in the final essay of this series as “an intellectually
tenable conceptualization of medicine itself, its essence.”

A fully realized critique of contemporary medicine would
examine, among other things, the societal positioning of
medical practice, modes of medical discourse and dissemi-
nation, conceptions of illness and suffering and of the
mind–body (or body–soul) divide, ethical frameworks and
the distribution of power. The focus of Miettinen’s critique
is clinical reasoning. Fundamental to his analysis is a rejec-
tion of the Flexnerian understanding of modern medical
practice as “science.” In so far as the practice of medicine is
an art (or rather, a compendium of arts), it must strive to be
a scientific art. In recent years, trial-based evidence has come
to be seen as the guarantor of medicine’s “scientific-ness.”
For Miettinen, however, there can be no claim to scientific
practice where modes of reasoning lack rigour.

Thus Miettinen examines the illogicality of received no-
tions such as sensitivity and specificity, the false distinction
between effectiveness and efficacy, the “misguided” con-
ception of diagnosis as intervention and confused ideas
about the utility of screening. Perhaps most challengingly,
he examines the logical difficulties of the probabilistic exer-
cise we call diagnosis. The “proper theoretical framework”
for pursuing a diagnosis, Miettinen argues, is a logistic re-
gression model (an almost completely neglected model in
diagnosis), and not the simplified, sequential application of
Bayes’ theorem that is currently advocated. The patient’s
diagnostic profile is continually “updated” and must be “in-
terpreted as a whole,” taking into account the contextual im-
lications of each piece of information.

For Miettinen, the essence of medicine is not interven-
tion but the pursuit of particular forms of knowing, or gno-
sis. Diagnosis, etiognosis and prognosis (etiognosis mean-
ing knowledge of the role of a potential cause, not the
potential cause itself) reside in the physician’s mind and are
the intellectual telos of medicine. The illness itself, its
course, and its genesis reside in the experience of the pa-
tient. The physician’s knowledge of the patient’s health is
particularistic, not abstract. Yet, in pursuing dia-, etio- and
prognoses, the physician cannot view the patient as unique,
for then the patient’s health would be a completely un-
known entity, his or her situation something never encoun-
tered before and hence unrecognizable, undecipherable.
The challenge of diagnosis is to determine probabilities
that are as specific as possible to a particular patient.

For Miettinen, the province of the physician is ulti-
mately captured in the root of the word “doctor”: docere, to
teach. In the penultimate essay he writes, “Might it not
serve as a fundamental tenet of the theory of medicine that
the clinician’s principal responsibility is to teach the client
about his/her health — including … how intervention
might change it for the better?” At this point, the reader
may step back from the often-surprising intricacies of Mi-
ettinen’s argument, to find that the patient comes, perhaps
a little dimly, into view.

In part, Miettinen’s essays are a deconstructive exercise;
with quietly assertive politesse, they take a velvet hammer to
beliefs whose defence has become reflexive. (As in the
statement: “No patient is unique.”) Not all readers will
warm to their style. But critique and theory-building might
be considered as creating positive and negative impressions
of the same object: the former prods at what is missing or
faulty; the latter asserts the principles that hold up struc-
tures of reasoning and action and that may be relied upon
and imparted to others. Eventually, it is to be hoped, criti-
cal inquiry will find the statue in the marble it has frac-
tured. If Miettinen succeeds, that figure will prove not to
be the Aesculapian god-physician, whose practice is based
on convention, supposition and mystique, but a new Hip-
pocrates, whose scientific practice of the art of medicine is
“learned, wise, modest and humane.”

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Reference


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