

To Chuck Stone,
with admiration —
Sherwin

THE
UNCERTAIN
ART

Prooemium

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There is a wisdom in the acceptance of uncertainty. Well used, it can make a philosopher of an ordinary man. To the intuitive mind of the twenty-two-year-old John Keats, that precious insight appeared in a flash of understanding one day in 1817, while he was deep in conversation on a long walk with two friends. "[S]everal things dovetailed in my mind, & at once it struck me, what quality went to form a Man of Achievement," he later wrote in a letter to his brothers. "I mean *Negative Capability*, that is when a man is capable of being in uncertainties, Mysteries, doubts." To become comfortable with uncertainty is one of the primary goals in the training of a physician.

Keats wrote those words—italics and all—during the period when he was composing *Endymion*. Less than a year earlier, he had stopped attending the lectures that were to prepare him for the examinations of the Royal College of Surgeons. Although poetry and the pursuit of sunbeams had long since become Keats's passions, he had been anything but an indifferent student. The statements of contemporaries attest to his skillful performance of clinical duties, and he had already qualified to practice medicine in July 1816, following a year's study at Guy's Hospital. Medical education was brief in those days. Although the examinations were difficult, there was little of real usefulness to learn.

It was not possible for a perceptive man to study medicine in the early nineteenth cen-

tury without becoming aware of the degree to which patient care was conducted in a pervasive atmosphere of inexactness. Like all young doctors of the time, Keats very likely admired his teachers at Guy's all the more for their ability not only

to be decisive in the face of uncertainty but actually to thrive in the absence of clear clinical signposts. Most doctors did not even know the basic principles of physical examination, which were just then being introduced—and in Paris, no less. It was in 1816, in fact, that René Laennec, a Breton who at five feet three inches was almost as diminutive as Keats himself, invented the stethoscope.

For physicians, the nineteenth century was characterized by the gradual infiltration of new scientific findings into medical thought. The process accelerated rapidly in the 1880s and 1890s as the products of laboratory investigations in physiology and bacteriology were finally shown to be of practical use at the bedside. By the first decade of the twentieth century, an increasingly credible scientifically based medicine had routed the forces of homeopathy and the other irregular sects that, until then, had retained some hope of gaining ascendancy. From that point onward, the Holy Grail would be a form of practice based on knowledge gained by observation, hypothesis, experiment, and verification, in which uncertainty, if a factor at all, would be quickly dispersed by the next series of laboratory or epidemiological studies—a discipline, in other words, that might with real justification come to be called a science.

Yet even with an expanding population of trained researchers and increased funding for medical education and research, wise observers recognized the existence of problems

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unique to the practice of medicine that would forever frustrate its hopes of becoming a true science. Dr. William Osler of Johns Hopkins, at the time by far the most scientifically advanced of American medical schools, pointed this out on several occasions. "[W]ho can tell of the uncertainties of medicine as an art?" he asked rhetorically of an audience of physicians in 1903. "The science on which it is based is accurate and definite enough . . .

[but] no two individuals react alike and behave alike under the abnormal conditions which we know as disease." He spoke that day of "this everlasting *perhaps* with which we have to preface so much connected with the practice of our art." Osler lauded the pursuit of probability, recognizing that to pursue certainty is to chase after an illusion. In this, he was no more than echoing the First Aphorism of Hippocrates, written twenty-three hundred years earlier: "The Art is long, life is short, opportunity fleeting, experience delusive, judgment difficult."

It is judgment that lies at the heart of diagnosis, of therapy, and of all that is gathered under the umbrella called case management. Inherent in the nature of clinical decision making is the realization that, perforce, it must always be accomplished in the face of incomplete and largely ambiguous information. The process is one of sifting, weighing, and judging, and it will ever be thus. Disease never reveals all of itself; the path toward healing may appear visible, but it is always poorly lit and subject to changes in direction. No matter what biomedical advances may realistically be expected in the future, no one who has spent more than a few months at the bedsides of the sick could find it conceivable that this imperfect state of affairs will ever change. Uncertainty is more than a constant. It is the very muse that inspires the intellectual fascination of medical practice. To accept it is the essence of wisdom; to *enjoy* it is the essence of the enrichment of a doctor's soul, exceeded only by the personal reward of helping a fellow human being in trouble. Without uncertainty, there would be no need for judgment. Without judgment, medicine would be a career for technicians and, given the intrinsic nature of illness, an impossibility.

Almost a hundred years have passed since Osler spoke of the uncertainty inherent in the art of medicine. Surely, one might ask, has not the exponential increase in scientific knowledge, especially during the past three decades, vastly changed the situation? Do we not nowadays have access to sources of information that have markedly decreased the uncertainty? The answer to both questions, of course, is yes. But the operative words are *changed* and *decreased*—not *erased*. For as long as there is individual variability in human biology; in the specific manifestations of any given disease; in the social setting in which the disease occurs; in the psychological response to disease; and, in turn, in the feedback effect of that response on the disease and the patient's perception of it—as long as all those differentiating and problematic factors exist, as they will forever, there can be no certainty in medicine, and medicine will remain an art rather than a science.

But what of the allegedly undisputable nature of the evidence on which so much of the so-called scientific medicine is based? On close inspection, much of that turns out to be disputable and even undependable. In a word, uncertain. Were it not, medical theory would not be subject to the frequent oscillations in diagnostic and therapeutic thinking that have characterized it in our era. In the past two or three decades alone, we have witnessed wide swings of expert opinion on such matters as the proper treatment of breast cancer, the cause of peptic ulcer, and the future of infectious diseases, about all of which physicians had previously felt quite certain. Other sacred cows will no doubt stop producing milk in the coming decades. The single certainty is uncertainty. Only the reliability of unreliability is to be relied on.

Medical interventions and instrumentation have traditionally entered the canon of usage without fulfilling criteria that would satisfy even the least demanding of bench scientists. Satisfaction with immediate and early results, absence of obvious harm, and habits of long custom have sufficed to keep therapies in the current arsenal and discouraged physicians from critically questioning their efficacy. As surprising as it may be to the general public and even to many physicians, medical meth-

ods and theory stand on far less firm ground than is generally realized. Although science is the most highly regarded ingredient (with personal experience a powerful second), large if unrecognized dollops of individual bias, authoritarianism, cultural values, and even emotion find their way into bedside lucubrations. Every one of these factors—including those that on the surface seem unqualifiedly negative—has its own benefits. Each, including science and experience, likewise brings its own innate problems into the mix. When one or several ingredients inevitably change with the passage of time, medical fashions change with them. As Lynn C. Epstein, Associate Dean of Medicine at Brown University, so aptly put it: "While the continuing gains in medical knowledge and the accompanying ability of doctors to treat the sick have been real, the passage of time has too often proven the espoused remedies of one era to be of limited value or frankly harmful in the next. . . . How much of what we embrace as truth today will suffer this fate over the ensuing decades?"

Geography counts too. Significant variations in methods of treating the same disease have been shown to occur in different cities, indicating that what might be called the local medical culture is a real factor in the choices physicians make. The glaring spotlight of official attention has now been turned on such issues of medical uncertainty. Recognizing how few clinical interventions are supported by valid evidence of long-term usefulness, the federal government has established the Agency for Health Care Policy and Research to study the late effects of various medical methods. The field of so-called outcomes research—in which large numbers of patients are studied over long periods of time in an attempt to find out what really happens when one or another treatment is used—is now all the rage.

And even after such investigations have been conducted for decades, to what use can the agency's critical evaluations be put in the case of any specific patient? Given the spectrum of illness presentations, we will be left with what we have always had and always will have: the acceptance of the long-established principle that the practice of medicine is

characterized by uncertainty and will always require judgment in order to be effective. That is its very nature.

Not only is the management of disease itself uncertain, but even the proper domain of a doctor's concerns is hazily demarcated and subject to vigorous debate. Every decade extends the boundaries. It is no longer enough to diagnose and treat organic and mental pathologies. Doctors are involved in a wide variety of problems that in previous eras were left to be solved personally, or by families, social agencies, or government bureaus. An organization of physicians has even won the Nobel Peace Prize for its ban-the-bomb activities. Whether or not one feels these subjects are appropriate for white-coated attention, the fact is that ours is an increasingly medicalized society.

Even our notions of what constitutes a sickness are widening. Who in Osler's day would have consulted a doctor because he was unhappy over the shape of his nose or unable to achieve a satisfactory erection at the age of sixty? Some of the change is the result of new technology, but some is symptomatic of the temper of our time, in which anything that causes human unhappiness is unacceptable and therefore a fair target for the physician. And some of the change is based simply on what insurance companies will pay for. Before the general advent of third-party payers, no one took a child to the emergency room because of a scraped knee.

Clearly, the definitions of medicine's limits are uncertain nowadays. So vaguely defined have they become that the Hastings Institute, America's premier bioethics think tank, has for some years been conducting an international effort called the Project on the Goals of Medicine, which seeks to answer such basic questions as what medicine should be trying to do for individuals and for the greater society.

All of which is a rather long prologue to introducing this new column in *THE AMERICAN SCHOLAR* and explaining the title I have chosen for it. By now, it is doubtless clear that "The Uncertain Art" refers to medicine and that I have been attempting in the foregoing paragraphs to stake out a territory

whose boundaries are sufficiently vague that I may feel free to roam wherever inclination leads me. Roam, that is, so long as I stay within sight of my assignment, which is to write as a doctor about issues associated with doctoring.

I have chosen to interpret that word—*doctoring*—in its broadest sense, the sense of the entire spectrum of what should concern the ideal doctor. By this, I mean a man or woman trained as a physician but committed as much to the humanism of medicine as to the science. And as for science itself, I interpret that heading to include both the microcosm and the macrocosm. So many far-flung aspects of scientific study influence both biomedicine and clinical practice nowadays that none of its branches can be excluded. Our Hippocratic forebears and our colleagues who use non-Western forms of treatment have made much of the interrelationships between the health of individuals and humankind's participation in nature's surrounding universe, and I intend to do no less. Moreover, having invoked Keats in this very first essay, I have set a precedent for straying untethered when the impulse strikes, as have so many literary doctors of the past. In this, I turn for validation to William Carlos Williams, who said of his daily medical round, "[I]t was my very food and drink, the very thing which made it possible for me to write." The art of medicine is a crucible into which go and out of which come the mixtures that make life.

Just as medicine has permeated every aspect of our society, so the process of extending outward the free association of a doctor's

concerns will allow for much that might seem far afield. During the first century, the Roman scholar Celsus produced a three-volume work intended to describe for the general reader all that was then known of the art of healing. He was not a physician but a member of that small band whom students of the classical period call encyclopedists, and his *De Medicina* is encyclopedic. It deals with every aspect of sickness, health, medical history, philosophy, and ethics in which an ordinary citizen might be interested. When I began thinking about this column, I could not help remembering Celsus. While his work is not exactly a prototype for what I hope to do here, his breadth of vision about what constitutes the arena of medicine provides a framework for my subject's ramifications, or at least a background against which to consider them. It is in recalling Celsus that I chose to entitle this first effort *Prooemium*, as he calls the preface in which he outlines his notions of the scope of medicine and his intentions for his writings. In my own *Prooemium*, I have tried to do just that.

Celsus stayed within the admittedly wide boundaries he set for himself, and it is my intention to do the same. Of course, should I be found to have strayed willy-nilly beyond the fuzzy edges of even the most extensive frontiers, this column may one day require its own Project on Goals. But when I consider the vastness of the territory that I can legitimately claim as my own—and the generosity with which the fruitful landscape has been endowed—that day would seem to be far off.

I have been handed a dream job.