INTRODUCTION

> The complex varied influences [which mold the developing mind of physicians] of Art, of Science, and of Charity; of Art the highest development of which can only come with that sustaining love for ideals which "burns bright or dim as each are mirrors of the fires for which all thirst;"* of Science the cold logic of which keeps the mind independent and free from the toils of self-deception and half knowledge; of Charity, in which we of the medical profession, to walk worthily, must live and move and have our being.
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> Sir William Osler (1894), "The Leaven of Science" (lecture on the dedication of the Wistar Institute of Anatomy and Biology of the University of Pennsylvania)
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> *Shelley, "Adonais: An Elegy on the Death of Keats"

This book is about clinical medicine, the Art to which Sir William Osler referred, and the work of clinicians—physicians dedicated to the care of patients. It is about the goals of clinical medicine and the actions of clinicians necessary to meet those goals; about how doctors think through cases; and about their goals, guiding principles, and the basic ideas that underlie their thoughts and their actions. As a result, it is also about Osler's reference to "Science" and "Charity." The underlying thesis is that clinical medicine and clinicians have again become important for the care of patients and the health of the medical enterprise in ways that have been scarce for many decades. This preface will show, I believe, how the rise of clinicians in contemporary medicine and the necessity of this book have come about because of the failure in the care of patients in the model of the scientific doctor, which has been the dominant ideal of the preceding many decades. Note carefully: It is not science that has failed. The science has been superb and provided understanding and diagnostic and therapeutic power not even dreamed

of at the beginning of the 20th century. The failure has been the belief that it is the scientific knowledge by itself that does these wonders for patients. The scientific doctor of the ideal is the tool that applies the knowledge. Clinicians do not only apply scientific knowledge. In the last two decades, the rise of "evidence-based medicine," it was hoped, was to remedy previous defects in the scientific medicine of the 20th century. Unfortunately, the kind of subjective information and personal judgment that arises from individual clinical experience and patient values and then integrated with best evidence (as called for by David Sackett and many others) has been ruled out of court as unscientific and of lesser value. This is evidenced by the training, behavior, and beliefs of physicians trained in contemporary medicine.

The problem is not only that medicine is not a science but only uses science. The difficulty is that it employs two kinds of knowledge and two kinds of thinking, each quite different and distinct from one another. Thinking in scientific terms is often called logico-deductive thought—thought about things that has been the object of study and development for more than two thousand years. The other kind of thinking is narrative thought—thinking about life or even events as they occur through time; the kind of thought in which historians are trained. This is the thinking we use when we tell a story, something that people do all the time. Here truth is revealed not by deduction but by the way the narrative unrolls where we can accept some happenings, developments, or outcomes as more likely or true to life than others. These—the scientific and the narrative—are both employed by clinicians as they take care of sick persons, parts of whose sickness (the physical effects of disease) are understandable in scientific terms and other parts (as the sickness develops and has an impact on the person's life over time) only in narrative or historical terms.

Clinicians, as a consequence, are not scientists, they are clinicians. They are engaged in an endeavor unique in itself with its own methods, modes of thought, and pertinent information. Like all physicians, clinicians are trained in human biology—scientific knowledge about the body and its functions. They are experts in the world of sick patients. They use science, scientific methods, and what science discovers in their pursuit of knowing why their patients are sick and making them better. Simultaneously and just as often, however, they use what they know and can discover about persons sick and well how they live their lives, how they behave, what they will and will not do, how to motivate them, what is important to them, what sickness means to them, and how they change in response to sickness, as well as more mundane things about their relationships, food, exercise, sexuality, and much, much more. Clinicians need to know these things about their patients, because in order to have an impact on the patient's pathophysiology they must necessarily act on patients themselves. All doctors are extensively trained in the scientific aspects of medicine, but what clinicians come to know about sick persons—patients—is primarily experiential. As they gain experience they learn how to think like clinicians. (If you believe that is solely how to make a diagnosis, you share a common misconception. See Chapter 11 for a discussion of clinical thinking.)

Until the 20th century almost all physicians were clinicians primarily devoted to patients. As science entered and altered medicine that changed. The ideal since the beginning of the 20th century became the scientific physician, who does research as his or her primary interest but may also care for patients. It is past time that the profession accepted the need and existence of more than one equally skillful kind of physician. These are the clinicians whose unique role, goals, and skills are described in this book and whose complete focus is the care of sick patients. (In the last

several decades another kind of physician has come to prominence whose special skills and interests lie in the development and use of new and impressive technologies.)

THE PLACE OF DISEASE

The idea that medicine should be “patient-centered” or “person-centered” has grown and achieved currency in contemporary medicine, without displacing the centrality of disease. This is because, unfortunately, these new directions in medicine do not come with guidance about what the place of ideas about disease should become. That is not a small matter in light of an almost single-minded pursuit of notions about disease throughout the history of medicine. The detailed conceptualization of disease (originally) as an alteration in bodily structure has occupied a central role in medicine since the modern anatomical definition of disease in the late 18th and early 19th century. During this period, the development of ideas about the nature of disease, its diagnosis, and its treatment have progressed remarkably. Finding diseases, researching their basic nature down to the molecular level, discovering their genetic underpinning, and discovering their cause and treatment have occupied the wonderful world of research in medicine. Disease from this perspective is like a thing, an entity with seemingly independent existence from the patient whose sickness it is causing (more on this later).

Disease has remained in its dominant role as the cause of sickness. In the medical world, since the invention of disease in its current sense more than 200 years ago, it has been believed that when persons are sick it is because they have a disease; disease is central to medical thought. The idea that the person, not the disease, is paramount has not had the impact on medicine that had been hoped, because in its practice and teaching, medicine remains overwhelmingly focused on disease. In this book, the central idea is that clinical medicine is about the care of the sick, and the goal is the well-being of the patient. Here, the disease is secondary to the patient. Well-being

is achieved when patients—sick persons—are able to achieve their purposes and goals; to do what is important to them in their lives. *Sickness* is defined here as the inability to achieve goals and purposes because of impairments of function that the patient believes are in the domain of medicine. Limitation of function may occur from the molecular level to the most complex human activities and thought. The best known and perhaps most common basis for functional impairment is disease. There are, however, other non-disease sources of functional impairment that arise in the lives of persons. Look around in any environment with many elderly persons and see how much non-disease-related functional impairment is present. Some functional impairments are primarily physical, others are psychological, and some are social. Functional impairment as it exists in real life belies sharp separation of these categories. These impairments have also become important to clinical medicine.

Clinical medicine and clinicians are again coming to the fore because of the problems of an increasingly disease-centered and science-dominated medical practice. The major problem is, simply stated, that when persons are sick, the sickness has an effect on every part of them, and if attention is paid only or even primarily to the pathophysiology, the disease, or the body, then the other aspects and particulars of sickness will get inadequate attention and the impact of the sickness may go on and on. That probably did not matter so much in the era of acute diseases because the patient was either soon well again or died. Now that the overwhelming majority of medical problems come from chronic diseases, from persons with enduring disability secondary to diseases, birth defects, or trauma, and from an aging population, the inadequacies of disease-centered medicine cause problems for individuals and for populations. Also, as Dr. Donald Boudreau has pointed out, contemporary medical practice and teaching have cast aside the

fundamental importance in medicine of relationships: the doctor–patient relationship and the teacher–student relationship.

Sometimes it appears that when physicians approach symptomatic patients they are looking only for a disease. Interest in the patient or the patient's illness, politeness, compassion, bureaucratic functions, as important as they may be, may seem to an observer of medicine and its practice to be beside the point; finding a disease is what counts. If a disease can be discovered, even when the disease is a poor explanation for the patient's illness, the disease becomes the focus of physicians' interest. In chronic diseases such as diabetes, the time with the patient will often be spent on diabetes as a disease of glucose regulation, even though that is often easily solved, in comparison to other issues of chronic illness that are disregarded. If no disease is believed to be present or cannot be found, generally the patients' problems are shunted aside, symptoms are treated simply because there are treatments, or the patients are essentially dismissed or placed in a category of lesser interest. You will see this to be true for Myra Manner, in Chapter 5, who had symptomatic lymphoma for almost a year before it was uncovered. When you read about her you will see that the doctor said Myra Manner had bronchitis, and isn't that a disease? Bronchitis here, like so often sinusitis or pharyngitis, is just a disease name that physicians may use to justify giving antibiotics; they have not thought about it as an actual disease with known etiology (usually viral), onset, symptoms, course, and outcome. Some physicians may bridal at this interpretation of their actions, pointing out rightly that their interest in the patient is genuine, as is their concern that their behavior in regard to the sick be uniformly kind and compassionate. As true as this may be, let them smell *real* disease—say, Wegener's granulomatosis— and that is where their minds and purposes will go. It is this almost single-minded focus on disease entities, especially hunting for their ultimately molecular origin, that

marks Western scientific medicine and creates difficulties for physicians in the multiple other things they do, from counseling to treating suffering. A typical statement of this is found in Albert, Munson, and Resnik's (1988) *Reasoning in Medicine: An Introduction to Clinical Inference*: "Clinical medicine aims to identify, diagnose, treat, and prevent disease. Indeed, a concern with disease, either directly or indirectly is a fundamental feature of every medical enterprise." Because of this, sadly, patients come to physicians thinking the doctor will try and find out what the matter is and make it better, while doctors, true to their training, are not primarily interested in what is wrong but in trying to find a disease.

THE ORIGINS OF CONTEMPORARY MEDICINE

Our medicine traces its roots to the Hippocratic era of antiquity in Greece (about 460–370 BCE). It is then that doctors as we know them came into being. The world-changing idea was basing medical practice on observed afflictions of the patient rather than religious or philosophical beliefs about the causes and treatments of sickness. Two books in the Hippocratic writings make the point. In "On Ancient Medicine," the very first essay in the Hippocratic corpus, Hippocrates makes it clear that medical knowledge is founded both on observation of the sick patient and on reasoning and also that sickness changes persons. The other book (about epilepsy) is called *Sacred Disease* (Hippocrates, 400 BCE/1923) The text opens: "I am about to discuss the disease called 'sacred.' It is not in my opinion any more divine or sacred than any other diseases, but has natural cause, and it's supposed divine origin is due to men's inexperience." These were revolutionary ideas.

Since then, medicine has remained primarily rooted in knowledge or speculations about the body, how it works, and how it becomes deranged. This has a long history, so it is not surprising that there has not been a straight line of advancing knowledge but rather a number of

detours and side trips into one theory or another of the nature and causes of sickness and disease. The influence of Galen and his interpretations of Hippocrates lasted, incredibly, from second century Rome until accurate human anatomy came into being with Vesalius, in the 16th century. During the Renaissance, and slowly thereafter, more and more knowledge of the body and diseases accumulated.

A more solid understanding of disease—the reason why the sick person is sick—came into being with the publication in Latin, in 1761, by Giovanni Batista Morgagni, of an extensive study of pathological anatomy that was based on more than 600 autopsied cases. It was widely admired in its time but did not lead to the establishment of a "school" as did the efforts of the Paris physicians in the beginning of the 19th century (Foucault, 1963/1973). In the Hotel Dieu, Hospice de Salpêtrière, Necker Hospital, and other Paris hospitals, after the French Revolution and in the first years of the 19th century, when the doctors had finally wrested control of the hospitals from the nuns and the church, the medicine of disease, pathological anatomy, and clinicopathological correlation in which we have all been trained, was firmly established. The physicians chose who was to be admitted to the hospital, followed patients' course, and, if the patients died (10–20%), they did the autopsy immediately (Risse, 1999). The French physicians Marie-Francois X. Bichat, René T. Laënnec, Jean N. Corvisart, Phillipe Pinel, and others were not the first to have the idea that when somebody is sick there is a discoverable pathological entity that can explain the patient's symptoms; it had been actively percolating for half a century or more in Scotland, England, the Netherlands (Leyden), and Austria (Altschule, 1989). The Paris school, however, demonstrated the fact most thoroughly and conclusively and developed the best nomenclature of disease, the basis for the modern classification of disease (nosology) (Faber, 1923; Foucault, 1963/1973; Osler, 1921). Students came to Paris from many countries to

learn and take back home with them these new and increasingly systematic definitions of disease. Common definitions and a common language facilitated the entrance of science into medicine. The definitions, classification of disease, and autopsy methods of pathological anatomy and clinicopathological correlation developed by the doctors of the Paris school spread over the remainder of Europe and then the United States, being enriched and extended as knowledge of pathology, bacteriology, body chemistry, and laboratory methods grew.

By the end of the 19th century, Germany was the seat of the most sophisticated medical science and the model for medical education. Science and scientific thinking had become firmly established as necessary for the further advancement of knowledge of the nature, causes, and methods of treatment of disease. By the time Richard Cabot, in Boston, founded the clinicopathological conference early in the 20th century (still published as the "Case Records of the Massachusetts General Hospital: Weekly Clinicopathological Exercises" in the *New England Journal of Medicine*), the idea of disease as a physical thing that made the patient sick and diagnostic methods were firmly established as the basis for the clinical practice of medicine as they remain to this day.

THE CENTRAL PLACE OF DISEASE

Diseases have been center stage ever since as causes of human illness. In North America in the early decades of the 20th century, as a result of improved sanitation, hygiene, improved nutrition, and economic growth, the death rate primarily from the acute diseases fell. The death rate has continued its steady decline, and the causes of death have changed dramatically. Over these same decades, however, it became increasingly clear that the original ideas about diseases would not stand up. For example, the belief in specific causation—the same disease always has the same unique cause (Faber, 1923), fell before the realization that even in most bacterial diseases it

required more than the presence of the organism for the disease to occur. Biological, social, personal, and psychological factors could all be shown to be part of the chain of causation of even seemingly straightforward diseases such as pneumonia (Cassell, 1979; see also Chapter 5 in this book). Albert, Munson, and Resnik (1988) have an excellent full discussion of the disease concept and its difficulties, in which they end up defining disease this way: "We recommend the adoption of the view that disease is best understood as a departure from normal functioning." Their definition is a far cry from earlier and still accepted statements: "Any sickness, ailment, or departure from the generally accepted norm of good health; most often, a specific disorder or type of disorder, disorder of a specified part, organ, or tissue, or function, or a disorder due to a specific agent" (Walton, Barondess, & Lock, 1994). Or, "Any deviation from or interruption of the normal structure or function of any part, organ, or system (or combination thereof) of the body that is manifested by a characteristic set of symptoms and signs and whose etiology, pathology, or prognosis may be known or unknown" (*Dorland's Illustrated Medical Dictionary*, 2012). Unfortunately, Albert et al. restrict their definition to departures from normal biological function. That artificial restriction may be useful to laboratory research, but it will not help clinicians for whom the overlap between biological, psychological, and social function is a constant feature of their work.

The concept of disease has become, as Joseph Sapira (1990) wrote, in his wonderful book, *The Art and Science of Bedside Diagnosis*, "a member of a set of verbal symbols used by physicians to communicate with each other in reference to individual human events." Disease nomenclature remains indispensable as the shorthand language of the entire medical community (in fact, the common language of disease and medical science helps create our community) that allows physicians to speak easily and efficiently to other physicians worldwide and to provide

patients with names for their troubles. Patients are even more enamored of diseases and their names than we are; why not, where would they have learned differently? Diseases names and their associated language are essential to satisfy the bureaucratic requirements of insurance companies, other third-party payors, and the multitude of agencies, official and unofficial, having an impact on medicine. The utility and dominance of disease language is a lesson about the importance of a common language for the spread of knowledge, ideas, attitudes, and behaviors. There is no comparable language of persons or human function, and that impedes the wide acceptance of ideas in these domains.

As the 20th century progressed, the acute and infectious diseases moved to the periphery as their death rates fell while chronic diseases, problems of persons with disabilities, and the afflictions of aging moved to the center of medical attention. Changes in the pattern of diseases and causes of death have not altered a fundamental belief: In the mind of the public, patients, medical students, physicians in training, the research community, and practicing physicians, the focus of medicine is on diseases in ever more sophisticated scientific terms; on the large and growing diagnostic, therapeutic, and technological array; and on drugs and drug treatments. The disease is central. All of this is highlighted by the recent trends in genomic medicine. Completion of the sequencing of the genome and the increasing ease of isolating and characterizing specific genes and their functions have led many to believe that genetic characterization of specific disease would lead to their effective treatment or prevention in a much more parsimonious manner—so-called personalized medicine. Ideas about psychological elements in the patient's state and beliefs about direct psychological and social interventions that were well-founded and popular in the middle of the 20th century have fallen from central concern as the influence of science has risen.

Without disease concepts defined by criteria that are replicable, there could be no good scientific studies of disease in the laboratory or clinically. Whatever problems there may be with disease language in the clinic, it remains indispensable for research. Modern medicine and medical progress in the absence of all the knowledge and science that has been acquired about specific diseases in the last two centuries is literally unthinkable, and none of that could have occurred without the common language.

THE PROBLEMS OF DISEASE LANGUAGE

There are, however, at least eight things wrong with disease language:

1. Disease names, for example, *coronary heart disease* or *carcinoma of the breast*, wrongly imply that a disease is a concrete thing (as opposed to an abstract concept) that can be found separate from the patient in whom it is found.
2. Disease names, for example, *renal cell carcinoma* or *ulcerative colitis*, incorrectly imply that the disease and its behavior are independent of the persons in whom they are found.
3. Disease names, for example, *lupus erythematosis* or *chronic obstructive pulmonary disease*, mislead the unwary into believing that the name refers to one thing whose manifestations in individual patients are more alike than dissimilar. Just as the word *tree* refers to a class of things whose members are more alike than not, unless one wants to use trees or their wood, their variations are more important than their similarities.
4. Disease names, for example, *multiple sclerosis* or *pneumococcal pneumonia*, fool the unsuspecting into believing that what is referred to is a static entity, like the Bible, the Statue of Liberty, or the map of the New York City subways, rather than a

constantly unfolding process that is never the same from moment to moment. The history of disease concepts depended on and furthered the classic separation of structure and function in which abnormal function was believed to follow from abnormalities in structure. This distinction seems to have been derived from the idea of form (which goes back to the Greeks) and its consequences that loomed large in 17th- and 18th-century medicine (King, 1978). The hard and fast distinction between structure and function itself is invalid. Structure is merely slower function, in that it changes at a lesser pace than the process called function—put in mind how bony structure changes in response to trauma or age so that it continues to perform its original function. Even the Statue of Liberty and the Parthenon are constantly changing.

5. Having named a disease within the patient, for example, diabetes mellitus or metastatic adenocarcinoma of the lung, physicians may be fooled into believing that they know what the matter is at this particular time and why. The disease may be the sole underlying reason why the patient is sick, but more often other factors—physical, social, or psychological (or all three)—have been crucial in the generation of the details of the illness and its losses of function (Cassell, 1979).
6. Disease names, for example, *amyotrophic lateral sclerosis* and *psoriasis*, inadvertently cause physicians to fall back on definitions of disease that are now accepted as outmoded because they fail to provide an adequate basis for treating the sick.
7. Using disease nomenclature to describe human sickness encourages the belief that only research into (molecular) mechanisms of diseases holds promise for understanding and treating human sickness.

8. Finally, focusing on naming the disease takes attention away from the sick person.

Diseases as they are presently conceived are a gift from the Paris school of the early 19th century, developed to their present molecular sophistication by the science of the 20th and 21st centuries. The preeminent status of these technical and objective definitions of disease has been further enhanced by the way they are used in clinical epidemiology and evidence-based medicine (EBM) and by their bureaucratic role. These technical definitions are useful but only partly serve the need of clinical medicine and clinicians. Clinicians must include in their conceptions of disease all the complexity that they acquire because they occur in persons. These problems with disease definitions have been known for a long time (Crookshank, 1926).

THE CHANGING ROLE OF CLINICIANS

How have clinicians evolved during the period when science started to have an impact on North American medicine and then reached its present ascendancy? Physicians were always clinicians prior to the 20th century; their work was the care of patients. The good ones went to Europe to learn about diseases and the beginnings of real medical science from France, England, Germany, or other European centers. The preeminent North American clinician was William Osler, who graduated from McGill in 1872. Following postgraduate training in Europe, he returned to McGill as a professor in 1874. In 1884 he became Chair of Clinical Medicine at the University of Pennsylvania. In 1889 he became the first Physician-in-Chief of Johns Hopkins Hospital and was instrumental in founding and forming the Johns Hopkins University School of Medicine. He initiated and developed the idea of bedside teaching for medical students and started the medical residency. These teaching methods spread around the world. Famous for his ideas, his teaching, and his writings, he always considered himself a clinician first. Osler was an unquestioned advocate for increasing science in medicine, but he was against the idea of full-time faculty,

which was being advanced by colleagues at Johns Hopkins. He predicted that it would ultimately be the end of medicine's mission to focus on the sick patient. When he retired from Johns Hopkins to become the Regius Professor of Medicine at Oxford, he acknowledged that, against his advice, the advent of the full-time science-oriented faculty had started. Gradually and increasingly, his prophecy came true.

AFTER WORLD WAR II

The United States and most of the world came out of the awfulness of the Second World War with a powerful embrace of freedom, personal liberty, and individuality. This was demonstrated in the United States by the growing force of the civil rights movement and the women's movement. As part of these social changes, previously marginalized groups became full-fledged persons. Patients also became persons and were granted agency. In the 1950s came the Beat generation, Hippie movement (in the 1960s), and the "flower children," emphasizing a revolt against what was believed by these groups to be a hierarchical and stultifying society. Birth control pills introduced in 1960 helped along the already burgeoning growth in sexual freedom, an important step in the change of the status of persons. In this atmosphere, not surprisingly, in the 1960s came the birth of bioethics and its dedication to the protection in medical practice and research of persons and personal freedom. During this same period the country became more affluent, generally better educated, and healthier. Gaining a college education spread out to many more than previously and was less restricted by class. This was largely an effect of the GI Bill, but also because returning veterans were more mature and had earned enlarged expectations.

Doctors in the United States came out of World War II with increased stature and more authority. It does not go too far to say that they were often trusted and revered as representing a sacred vocation from the beginning of the 20th century as medicine itself grew in stature with the

development of the famous medical schools and clinics—Johns Hopkins, University of Pennsylvania, Harvard, Yale, the Mayo Clinic, and others. Through the 1950s and 1960s and early 1970s doctors themselves, not just their science, were at their peak in the eyes of their patients.

What Persons Were Like

During this same post-war period, persons in general were increasingly understood as deeper, more complex, and many-layered, with subjectivity and emotion counting for more. What you could see of a person or what they said or did were considered just the surface; it was accepted that there were many aspects of the person below the surface. These ideas, which became widely accepted, emerged initially because of the influence of psychoanalysis and other new psychologies. Seeing the psychology of persons in this rich and elaborate manner and the labyrinthine workings of the unconscious mind had been gestating since the last decades of the 19th century. Much illness was attributed to psychological and unconscious sources in the individual. Freud, Jung, Horney, Erikson, Alexander, Melanie Klein, and many other psychoanalytic pioneers were well-known names in the 1960s and 70s. Psychoanalysis and psychotherapy were commonplace at this time, widely thought about and discussed. Many departments of psychiatry in medical schools were psychoanalytically oriented. (Academic psychology, which tried to become a laboratory science in emulation of the hard sciences, contributed little during these years.) Overall, the result of all these forces were persons being politically enhanced, better educated, more complex, and personally more interesting.

The Start of the Predominance of Science

Science in medicine, science in general, and scientific thinking have become a powerful and crucial social force because of the enormous growth of medical science and scientific influence

since the 1950s. This was marked in medicine by the huge increase in budgets of the National Institutes of Health and the medical science establishment. After World War II, full-time science-oriented faculties in medical institutions became the accepted reality. The great attractiveness of science and medical scientists was not only the increasing understanding of the body and diseases they produced and represented but also the fact that science leads to knowledge that is objective and objectively certain. The subjectivity of much medical information is considered deplorable because it comes from the patient's symptoms and the opinions of physicians. The influence of clinicians about both what was wrong with the patient and what should be done would be ended, the belief was, by the objective truth of scientific facts. It is scientific knowledge itself, and medical technologies in this expansive view, that diagnose and treat disease, and it does not matter who wields them, student or professor. Clinical medicine and clinicians represented the old way; the scientific doctor became the new ideal. The change in the faculty and staff was underlined by two other trends: the rise of medical specialties and, later, the increasing importance of medical technology. The ideal doctor became the doctor-scientist, the research doctor. The wise, knowledgeable, and trusted clinician who took care of sick patients began to lose status and disappear. One of the best of these clinicians and an excellent teacher at The New York Hospital in the early 1970s looked forward to his retirement from practice, when he would start teaching full-time. Within 2 years, however, he left, a crushed man. The medical students had made it clear that they were no longer interested in what he had to teach.

The Central Tenets of Science that Spread Throughout the Culture

The ideas and ideals of science became universal in medicine and then spread out to the entire culture, where they are presently strong and widely influential. This is science as a social force.

These ideas include the belief that only objective data have validity. In medicine, *objective* generally means measurable. Only objective evidence counts in understanding the sick, sickness, and everything else. Subjective information and subjectivity itself is always suspect. Information or knowledge gained from narratives about a particular patient or episode is "anecdotal medicine" and, as such, believed to be of almost no value, despite the current interest in "narrative medicine." Scientific thought is linear. Linear thinking is a process of logical thought following a known step-by-step progression. The response to a step must be elicited and carefully defined before the next step is started. That step must be defined and explicated before the next step, and so on. Where there are leaps of thought, even when great creativity is involved—for example, the idea of the double helix as the form of DNA—before the idea can be accepted, the careful step-wise process of defining, clarifying through logical reasoning, and empirical testing must be undertaken. All scientific findings are open to confirmation or denial through replication of the original proof. Then the scientific results should return to effective operation in the original field of experience from whence the questions arose.

There are situations that do not fit these ideals. For example, students learning clinical psychology know that there are things they learn about their patients that are difficult or impossible to quantify. That does not change their thinking; they know they must keep looking for evidence and that finding evidence on which to base their actions is crucial. They remain true to the scientific ideals they were taught even when they cannot, on occasion, meet the goal.

THE SCIENTIFIC IDEAL TAKES OVER CLINICAL MEDICINE

In 1967 Alvan Feinstein published the influential book, *Clinical Judgment*, which showed how mathematical concepts and mathematical precision could be brought to clinical medicine. Feinstein, importantly, was primarily interested in the care of the individual patient and he never

lost that focus. The field of clinical epidemiology grew out of Feinstein's work but lost his concern with the individual. Instead, in applying mathematical methods of epidemiology to the care of patients, it increasingly emphasized mathematical methods derived from populations. These primarily statistical methods refined the precision of diagnostic and therapeutic evidence. They were always focused on disease and its objective physical manifestations. This major and increasingly important trend culminated in the movement called evidence-based medicine (EBM). As defined by Sackett, Rosenberg, Gray, Haynes, and Richardson (1996), "EBM is the use of mathematical estimates of the risk of benefit and harm, derived from high-quality research on population samples, to inform clinical decision-making in the diagnosis, investigation or management of individual patients." EBM has taken over medicine. Those aspects of sickness and the sick person that cannot be numerically measured are put aside. EBM has spread to allied health fields like dentistry, nursing, psychology, and even further out into education and educational theory. The physicians and their independent judgment earned through training and experience have been actively cast in doubt. In their place have been put algorithms and guidelines developed in order to instruct almost all the actions of physicians.

There were problems with this, the biggest one being that for science to be preeminent, medicine had to be defined as the treatment of disease, and the fact of the patient and the relationship between doctor and patient had to be demoted to somewhat romantic old-fashioned notions—the art of medicine. Disease had to be reduced to problems that could be explored in the laboratory or under controlled conditions. Treatment had to be scientifically tested, meeting the stringent requirement of EBM. All of these conditions moved medical science further away from clinical medicine—as well as, importantly, from the ideals of science itself. Science starts from "the radically untidy, ill adjusted character of the fields of actual experience. To grasp this

fundamental truth is the first step in wisdom when constructing a philosophy of science" (Whitehead, 1916).

THE ROLE AND TRAINING OF PHYSICIANS HAVE CHANGED

As a result of the practice of clinical epidemiology and EBM (and similar trends), physicians are expected to make patient care choices and assist patients in making choices on the basis of validated clinical methods. The physician is subservient to the methods, guidelines, and algorithms. This is true even in the training of medical students. The great advance in the training of physicians—bedside teaching with "the patient as text," introduced by Sir William Osler at the end of the 19th century and since then present throughout Western medicine until a few years ago—has almost disappeared. The students, by their choice, are now taught in front of the computer, where test results, X-rays, MRIs, and other images can be displayed. It is "the numbers" that count, and the many forms of diagnostic images and tests. Many studies have documented the diminished ability of contemporary students and recent graduates to take patient histories and do physical examinations—the long-standing basis of the clinical method. The emphasis on health care costs and on the organization of medical services based primarily on cost has been an added depersonalizing force. Both patients, whose "numbers" and tests are considered most important, and physicians, who are less valued than "the method," are diminished by these changes.

DEVALUATION OF PHYSICIANS

The general result is a depreciation of individuals. When expertise is derogated—it is not the person that counts, it is the facts—it is the expert person who is devalued. As I noted earlier, the ideal is that it is not the physician who diagnoses and treats the patient; it is the scientific knowledge. Whoever has the knowledge can do as well as the expert. This pervades society, and

it can be found at all levels and many areas of life. It seems at first as if it is just authority in general that is being discounted, but that is a result, not an initiator of the problem. This would seem not to be the case because of the increasing concern over the last several decades that medicine be patient centered. Now every hospital medical center and medical school declares that it is centered on the patient. Patient-centered has come to mean a focus on patients' wants, needs, desires, concerns, and preferences and the demand that patients have the education and support needed to make decisions and participates in their own care. Physicians have frequently moved to an advice and consent function where the patients are asked to make the decisions.

The care in these hospitals and medical institutions remains, not less than before, steadily focused on disease and its bodily manifestations. It could not be otherwise because of the increased influence of the methods, the values, and the inevitable reductionist focus of science. (For example, as noted earlier, genomic medicine, which aims to find the origins of the disease in the genome of the individual, has come to be known by its experts as "personalized medicine.")

THE DEBASEMENT OF PERSONS IN GENERAL

The general acceptance of the depth and complexity of persons that was arising and valued by the 1950s and 1960s has mostly disappeared. What happened to the unconscious and the rich psychological life that was widely discussed and even celebrated in mid-20th century? The unconscious and all the associated ideas, including the importance of psychogenic factors in illness, have disappeared. When people now speak of the unconscious they generally mean cognitive function occurring outside of awareness. Depth psychotherapy (and depth psychic growth) have gone away and been replaced by a generalized psychological method—cognitive and behavioral therapy. Departments of psychiatry and psychiatrists changed their focus to

biological factors in psychological illness and psychotropic medications. When persons and their complexity are debased so, too, are their relationships. Personal relationships from friendship to love, family relationships, and certainly professional relationships—doctor and patient, teacher and student, expert and neophyte—all of these relationships, as well as their depth, intensity, and complexity, are lessened. (There are, of course, individual exceptions.)

CONTEMPORARY MEDICINE

You might think, reading this Introduction, that the classic concepts of disease on which we were all trained would have had their day. Not true. What has happened instead is that increasingly sophisticated scientific understandings of pathophysiology based on increasingly profound fundamental knowledge and research technologies have led to an ever greater depth of basic knowledge about (especially esoteric) diseases. This new knowledge has penetrated and shaped clinical medicine with new tests and diagnostic technologies and newer validated therapies increasingly effective for patients who are proportionately fewer in number. Concern with disease continues because of widespread fascination with and continuing interest in all these new things among both physicians and the public. As is always the case, the use of effective new tools spreads from the small group of patients for whom they were developed to patients and clinical problems where their utilization is problematic, and then further to patients and doctors who only hope they will be helpful. Of course, new advances lead to greater cost—more expensive tests, diagnostic technologies, drugs, and treatment—and the cost spreads out. The net effect is a medical profession whose care is increasingly sophisticated, technologically based, costly, and useful for a smaller number of appropriate patients from among the entire population receiving care. This has led to a contemporary profession pricing itself and training many of its practitioners past practical utility. Following from these trends, fewer doctors are proficient in

the much less costly and widely necessary skills of clinical medicine—developing a relationship with the patient, understanding the sick person, taking the history of illness, attentive listening, observation, examination, description, communication, thinking through the patient's problem, coming to diagnostic statements, and deciding on the best course(s) of action—all of which are as essential as medicine's scientific basis for the proper and effective application of medicine's vast knowledge to the majority of patients.

THE CLINICIAN'S DOMAIN IS THE LAND OF SICKNESS

In medical science and contemporary medicine the information that counts is objective, primarily what can be measured, while information that is subjective, such as symptoms, feelings, attitudes, opinions, and virtually everything personal, is considered of lesser value. This means that of the three essential parts of medicine mentioned by William Osler, clinical medicine (the Art), which is not in itself science, and love of humankind (Charity), which is subjective, do not meet expressed standards of scientific medicine.

Step into the land of the sick, the natural domain of clinical medicine, and everything is changed. In the land of sickness it is impossible to avoid emotion, which is inextricable from the human condition and human experience. Diseases as conceptualized are essentially self-contained physical entities, but persons are of a piece. Whatever affects a part necessarily affects the whole person. It is because of the history of medicine that we know so much about the impact of diseases on the body, but what they do to persons-in-full is less well-known but just as real. What disease does to the person's functional ability to participate in life, in work, in the home and family, and in relationships is pushed aside. Medical care and interventions directed solely at diseases and pathophysiology and supported by the best evidence and with the patient's active support may not be sufficient to return a patient to a state of well-being. As long as the

definition of illness and medical actions remains centered on disease, these problems remain unsolved. What is wrong with the dominant theory of sickness is that it disregards these effects of sickness as well as why it is bad to be sick, and how sickness interferes with the sick person's life. These questions would have been silly in the era of acute diseases. The effects of sickness then were drastic, but patients were soon dead or returned to health. The majority of sickness is now caused by chronic disease like diabetes, many cancers, chronic obstructive lung disease, HIV/AIDS, chronic heart failure, chronic neurological diseases, the health effects of long-term disability, and the disabling impact of aging. These facts change the emphasis in treatment from only the pathophysiology to return of function and prevention.

CLINICAL MEDICINE REFOCUSED

I believe that medicine based on the fundamentals of the clinical method and centered on the patient, while less technologically intense (and less expensive), will prove to be more effective for the majority of patients. Not because it is a lesser medicine—in fact, it requires greater skills from individual clinicians—but because it is more closely related to patients' medical problems, functional impairments, and personal needs and desires.

Clinicians and clinical medicine require an alternative definition of sickness that does not diminish the importance of pathophysiology and the effects of disease but encompasses the impact of sickness on the patient's life and the impress of the patient on the sickness. The definition, basic to the new curriculum of McGill University's Faculty of Medicine, meets this need. I mentioned it earlier, but it needs restatement now. A person is sick when he or she cannot achieve his or her goals and purposes because of impairments of function that the person believes are in the realm of medicine. Impairments of function may be found from the molecular to the most complex human activities. They are often, but not always, the result of the

pathophysiology of disease. The final aim is *the patient's well-being* (Boudreau & Cassell, 2010; Boudreau, Cassell, & Fuks, 2007).

The goal of the clinician and clinical medicine is to restore the sick person to function so that goals and purposes can be achieved and well-being restored. To meet these goals, physicians require all the knowledge of patients I have described earlier here. Also required is that we meet the standard set by William Osler in the opening epigraph. Clinicians must develop and continually hone their clinical skills and abilities, the Art. They must know the Science. What did Osler mean by love of humankind (Charity) "in which we of the medical profession to walk worthy must live and move and have our being?" They must learn how to develop their relationship with patients, but it is a loving relationship and it is special. Let me explain. (The following is excerpted from the epilogue of *Doctoring: The Nature of Primary Care Medicine* [Cassell, 1997].)

> When a physician loves a sick person—feels connected or bonded to the patient, even when the bond is as intimate as may occur in the care of the dying—is it really the person that is the object of desire, in the sense that a partner in love is desired, or one desires the love of parents or friends? It is well known that the bond with a patient and sexual desire can become confused in the clinical setting—but it is confusion [that may have] unfortunate consequences.
>
> Physicians, from their student days onward, want to help their patients. From their earliest years and on into maturity, the behavior of physicians demonstrates not only an interest in diseases, medical science, and technology, but a concern with their patients, their losses, and their suffering. When that interest is not manifest, patients and the public call them to task. In order to reach their goals, physicians

must connect to their patients. The connection, that powerful bond, is the love of patients. I have discussed the problem of desire, but there is also the danger of being swallowed up or overwhelmed by the relationship. This danger also arises from the intensity of the connection required to know the patient. Here are the alternative hazards of the loving connection with patients. On the one side there is the peril of succumbing to physical desire; on the other the threat of becoming lost in the patients' pain, swallowed up by their needs and their losses. Both dangers keep the love of patients from its purpose. Drawing back from the bond diminishes the effectiveness of physicians. Yet another problem exists that helps define what is and is not meant by the love of patients. If the physician's love of the patient becomes like the love of any person for another outside the role of physician, then the objectivity necessary for clinical action becomes compromised. A case may clarify this issue. My colleague and I are discussing an older man whom we have been watching get sicker by the day. We are both worried because he looks as if he is soon to die. We believe there is a collection of pus somewhere, but where? His wife and daughter insistently press us about listening to our discussion, but I won't permit it. Why? Aren't my colleague and I very concerned and uncertain, and aren't the wife and daughter also concerned and uncertain? Yes, but the meaning of concern and uncertainty is very different for them and us. The pain of their feelings is borne of spousal and filial love. Ours arises from the love of medicine and the love of the patient. It is the love of the patient that binds us to him and his fate and drives our desire to know what is the

matter. (As it happened, he had a right subphrenic abscess missed on the first CT scan.) Without this love, we would merely be interested onlookers.

What is the purpose of the love (philia) of patients? We bond to them in order to help, but not merely by listening or being empathetic, although these are important. Physicians must make accurate diagnoses and provide appropriate treatment. It should be clear [from the new definition of sickness] that diagnosis is not merely the name of a disease nor treatment only giving drugs. Good physicians desire knowledge and desire to make the patient better. They are seeking the information necessary to make the patient whole, even in the face of death. Knowledge flows in one direction through the loving connection so that physicians can know what is the matter and in the other direction for accomplishing therapeutic aims. Physicians also desire the power that arises from knowledge and the ability to heal. The kinds of knowledge necessary to know the person. This is knowledge borne of the loving connection. It is about the person and about the person's sickness. Some of it comes up through the hands of the examining physician and other parts through skilled listening. Some of it is subjective—a feeling of or an intuition—but all of it is enhanced and given added dimension by the connection to the patient. On the therapeutic side, the bond permits effectively tuning or shaping physicians' technical medical actions to the patient. This kind of knowing through the agency of love distinguishes professional caregivers from those who only care. It differentiates medical care based on good intentions or unlettered compassion from that grounded in the physicians' love of patients.

SUMMARY: WHY THIS BOOK IS ABOUT THE NATURE OF CLINICAL MEDICINE

The medical care of patients requires in-depth comprehension of pathophysiology and the behavior of diseases. Clinicians must also know and understand persons sick and well and be aware of the multiplicity of influences on their lives and actions. Also necessary is knowledge of human function from the molecular to the spiritual, including what is required for participation in relationships, family, work, and social activities. The skills of the clinician include the basics of the clinical method: history taking, physical examination, description, clinical thinking, judgment, diagnostics, therapeutics, and prognostication. These are old-fashioned words now applied to a larger domain—the sick-person-in-full. A special relationship with the patients is vital in that it provides access to all aspects of persons. Clinicians, to "walk worthily," should exemplify in their relationships with patients the love of humankind that characterizes medicine. General appreciation of these diverse and vital aspects of clinical medicine and their skilled use has progressively diminished during the last 50 years. They are mostly gone from medical education as well. This book describes the knowledge and skills that clinicians require to rise to the needs of patients that have been lost to contemporary medicine.

The medical profession today is exciting, powerful, and technologically sophisticated. It is associated with a large and productive research establishment and fed by a stream of expensive new pharmaceuticals. It is popular with its lay audience (most of whom are well). Unfortunately, the ideal of the scientific doctor focused on science and the marvelous tools that science has provided has failed. Sick patients need more than what that doctor has to offer. Sick persons require clinicians who understand the science to their marrow but who go beyond that in their understanding of patients and their sicknesses—clinicians who understand how to return their

patients to a state of well-being. As stated earlier, this book is about the goals of clinical medicine and the actions of clinicians necessary to meet those goals; about how clinicians think through cases; and about their aims, guiding principles, and the basic ideas that underlie their thoughts and their actions.

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