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James A. Marcum

An Introductory Philosophy of Medicine

Humanizing Modern Medicine

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Preface

Today, traditional medical knowledge and practice in the United States are modeled after and depend upon the biomedical sciences and the technology derived from them. Although the biomedical model is responsible for the "miracles" of modern medicine, it often leaves many patients disenfranchised with the American healthcare system. "In spite of remarkable advances in medical therapy and in development of fantastic diagnostic devices," observes Franz Ingelfinger, "American society appears increasingly disenchanted with the physician" (1978, p. 942).[1] This disenchantment with modern medicine is based on "the delivery of [medical] care [that] has become more institutionalized and depersonalized" (Glick, 1981, p. 1037).[2] Again, David Weatherall claims that "the art of medicine, in particular the ability of doctors to care for their patients as individuals, has been lost in a morass of expensive high-technology investigation and treatment…In short, modern scientific medicine is a failure" (1996, p. 17). The overly enthusiastic appropriation of the biomedical model, especially in the United States, has precipitated over the past several decades a perceived quality-of-care crisis on the part of patients, as well as many within the healthcare system itself.[3]

In response to the quality-of-care crisis, many physicians and healthcare professionals call for humanizing the biomedical model upon which modern medical knowledge and practice are based. The result is a variety of humane or humanistic models from the biopsychosocial model to the narrative model, in which the patient's human dimension is reinstated into the patient-physician relationship.[4] These models in general attempt to replace a biomedical concern for a cure with a humane care for healing. In addition, patients now seek alternative and complementary forms of healthcare to compensate for the ineffectual treatment, especially for chronic diseases such as cancer, offered by—or for the negligence or perceived

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[1] For additional discussion of the erosion of the medicine's image, see Burnham (1982).

[2] Not only are patients disillusioned with modern medicine, but so are many physicians (Le Fanu, 2002).

[3] Besides the quality-of-care crisis, the spiraling costs of American health care have also spawned a cost-of-care crisis. For discussion of these crises, see Konner (1993) and Siegler and Epstein (2003).

[4] Both humanistic and humane are used in the literature and are used interchangeably here, although there is a significant difference between them, e.g. a humane person need not be humanistic.

indifference of—biomedical practitioners.[5] These alternative and complementary forms include holistic medical practices, which range from acupuncture to Edgar Casey therapy.

In this book I map the shifting philosophical boundaries of American medical knowledge and practice occasioned by the quality-of-care crisis, especially in terms of the various humanistic or humane adjustments to the biomedical model.[6] To that end, I utilize a philosophy of medicine that explores the metaphysical, epistemological, and ethical boundaries of these medical models. I begin with their metaphysics, analyzing the metaphysical positions and presuppositions and ontological commitments upon which medical knowledge and practice is founded; for the metaphysical position influences and constrains the entities—such as bodies, disease, and drugs—that compose the medical worldview. I then consider the epistemological issues that face these medical models, particularly those driven by methodological procedures undertaken by epistemic agents to constitute medical knowledge and practice.

Finally, I examine the axiological boundaries and the ethical implications of each model, especially in terms of the physician-patient relationship.[7] In a concluding chapter I explore how philosophical analysis of humanizing modern medicine helps to address the quality-of-care crisis, as well as the question: "What is medicine?" Specifically, the nature of medicine is discussed in terms of the debate over the art *versus* the science of medicine and its current manifestation of evidence-based *versus* patient-centered medicine, followed by a brief comment on the possible transformation of modern medicine.

Although I am not a practicing clinician, I am educated in both the biomedical sciences and the philosophy of science. I was trained a research scientist in medical physiology at the University of Cincinnati College of Medicine and conducted research on the role of endothelial cell proteoheparan sulfate in the non-thrombogenic properties of the vascular endothelium at Harvard Medical School (Marcum and Rosenberg, 1991). While a post-doctoral fellow at the Massachusetts Institute of Technology, I took a course from Thomas Kuhn on the nature of scientific knowledge (Marcum, 2005a). That experience reoriented my career towards philosophy of science, which I pursued at Boston College. Since then I have been actively engaged in research in the history and philosophy of science and medicine, especially on issues concerning models and methodology.

I must also address my motivations for writing this book. First I teach a philosophy of medicine course to undergraduates, many of whom are in the Medical Humanities

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[5] For results on a national survey about the reasons patients use alternative types of medicine, see Astin (1998). For the tendencies of Americans to choose alternative medicine, see Eisenberg et al. (1998).

[6] Although alternative and complementary models are important fixtures of today's medical landscape, their diversity defies a straightforward philosophical analysis as conducted herein.

[7] The specific bioethical issues, such as abortion and euthanasia, are not considered here. Rather, the biomedical ethics, in terms of normative ethical theories, is examined and discussed, especially the ethical dimension of each model and the ethical or moral nature of medical practice *vis-à-vis* the patient-physician relationship.

Program at Baylor University. On one level this book serves as a textbook for that course, especially to equip pre-healthcare students with the philosophical skills to reflect upon what type of medicine they may want to practice someday. On another level it is intended for physicians and other healthcare professionals, since I believe rather enthusiastically that philosophy of medicine is a crucial subject for them. The plurality of models available for medical knowledge and practice cry out for philosophical analysis in order to navigate among them. This book is an attempt to help the wary physician in such an endeavor.

Second, I am convinced that change is sorely needed in modern medicine, especially in terms of medical education and practice, and that change must be revolutionary. As Kuhn notes in *The Structure of Scientific Revolutions*, scientists involved in a revolution often turn to philosophy to help address the foundations of their discipline. Modern medicine, especially in America, is headed towards, if not already engaged in, a profound healthcare revolution *vis-à-vis* the quality-of-care crisis. The foundations of medical knowledge and practice must be examined philosophically to aid that revolution.

Finally, I must stress that this book is an introduction to the philosophy of medicine. To that end, I first introduce the content of traditional philosophical disciplines—including metaphysics, epistemology, and ethics—before mapping the shifting boundaries in these disciplines, in terms of what philosophers of medicine write about them. Even though I occasionally make a critical remark or observation about what others write in terms of the philosophy of medicine, my goal is to present their thoughts to enlighten and inform the reader. I must admit, however, that I am sympathetic to the humanistic or humane models, which often shape the discussion in the book—although I do argue in a concluding chapter how best to humanize modern medicine. Finally, I must emphasize that critical reflection on the philosophy of medicine, from my personal perspective, is the subject of another book.

Acknowledgments

I am indebted to a number of colleagues, including Mike Attas, Todd Buras, Bob Kruschwitz, Bill Stempsey, Kay Toombs, and especially Fred Tauber, who engaged me in valuable discussions and provided insightful comments that enhanced the quality of this book. I am also indebted to the students who take my philosophy of medicine course, for their enthusiasm that someday they will practice a more humane medicine; may this book continue to inspire them and others towards that goal. I am also indebted to Baylor University for several sabbaticals to conduct the research and writing required to complete this book. Finally, I am indebted to my wife, Sarah, and to my daughters, Meg and Meredith, for their loving support, without which this book and my life would be poorer. This book is dedicated to the memory of my parents, Richard C. and Madonna M. Marcum, whom I often served as an interpreter of the medical profession.

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Introduction: A Philosophy of Medicine?

The title of this book is problematic on two counts. The first is the title itself, as it pertains to the relationship between philosophy and medicine. Should that relationship be philosophy *and* medicine or philosophy *in* medicine or philosophy *of* medicine? If the last relationship is chosen, as evident from the title, then the question is raised whether such a relationship—as a discipline—exists. I first discuss these two problems in order to situate the philosophy of medicine developed herein, in terms of examining the biomedical and humanistic or humane models for medical knowledge and practice and addressing the quality-of-care crisis.

1 Philosophy *and/in/of* Medicine

In a round-table discussion held at the first trans-disciplinary symposium on philosophy and medicine in 1974, Jerome Shaffer questioned the validity of any relationship or interface between medicine and philosophy. “I am inclined to think,” claimed Shaffer, “that there are medical problems and there are philosophical problems, with no overlap or borderline area between them, no field which could be called medico-philosophy or philosopho-medicine on the analogy with bio-chemistry or astro-physics” (1975, pp. 215–216). Although he acknowledged that a field such as philosophy of medicine might exist, problems and issues arising from medical knowledge and practice are best addressed by philosophers of mind and philosophers of science as well as by moral philosophers. Hence, concluded Shaffer, “there is nothing left for Philosophy of Medicine to do” (1975, p. 218).

Edmund Pellegrino took issue with Shaffer, claiming that Shaffer in an effort to deny a relationship or interface between philosophy and medicine has “philosophized *about* medicine” (1975, p. 231). Pellegrino also made a distinction between a philosophy *in* medicine and a philosophy *of* medicine. The first relationship between philosophy and medicine, philosophy *in* medicine, is unproblematic and involves using philosophical methods to address philosophical problems such as causality in medical knowledge and practice. The second relationship, philosophy *of* medicine, Pellegrino admitted is problematic because of the nature of medicine. However, according to Pellegrino medicine is, *contra* Shaffer, more than simply the

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sum of the sciences that constitute it. Philosophy of medicine involves defining the nature of medicine *per se* or in terms of its essence. A few years later, Pellegrino (1976) added a third relationship between the two disciplines, philosophy *and* medicine, in a lead article to the first issue of a new journal entitled *The Journal of Medicine and Philosophy*. This relationship involves problems that overlap between the two disciplines.

Gerlof Verwey (1987) claimed in a critical commentary on Pellegrino and David Thomasma's *A Philosophical Basis of Medical Practice* that the nascent field of contemporary philosophy of medicine produced its first fruits.[1] Pellegrino and Thomasma rehearsed and further developed the three relationships between philosophy and medicine first proposed by Pellegrino.[2] "Philosophy *and* medicine," Pellegrino and Thomasma contended, "comprises the mutual considerations by medicine and philosophy of problems common to both" (1981a, p. 29). Problems common to both include consciousness, mind-body, perception, and language. The relationship is a collaborative affair, in which the two disciplines retain their individual identities. Although separate, each discipline may draw on the conceptual resources of the other for addressing a problem at hand. The result of such interaction is often the synthesis of a new idea concerning health or illness, especially through a dialogical method (Pellegrino, 1998).

"Philosophy *in* medicine," according to Pellegrino and Thomasma, "refers to the application of the traditional tools of philosophy—critical reflection, dialectical reasoning, uncovering of value and purpose, or asking first-order questions—to some medically defined problem" (1981a, p. 29). The problems may involve logical or epistemological issues, but the majority and most popular concern ethical issues. In this relationship, philosophers "function *in* medicine—that is, in the medical setting as educator and trained thinker exhibiting the way philosophy can illuminate and examine critically what physicians do in their everyday activity" (Pellegrino and Thomasma, 1981a, p. 30). Pellegrino (1998) later points to the use of existentialism and phenomenology as examples of fertile philosophies for analyzing medicine.

Pellegrino and Thomasma admitted that philosophy *of* medicine is the most problematic of the three relationships and needs careful explication. In philosophy of medicine, genuine philosophical issues concerning medical knowledge and practice are examined.[3] According to Pellegrino and Thomasma, this relationship is

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[1] The year before Pellegrino and Thomasma's book appeared, Tristram Engelhardt and Edmund Erde (1980) published an extensive article on philosophy of medicine in which they discussed ethical and epistemological issues in medical knowledge and practice.

[2] Later Pellegrino added a fourth categorical relationship, medical philosophy, which "is more a literary than a philosophical genre" (1986, p. 10). He cited works by William Osler and by Francis Peabody as examples of this relationship. More recently, Pellegrino has defined this relationship as "any informal reflection on the practice of medicine—usually by physicians on clinical medicine based on their reflections on their own clinical experiences" (1998, p. 324). Often this relationship between medicine and philosophy is taken to reflect clinical wisdom.

[3] Engelhardt and Erde (1980) also acknowledged the problematic nature of philosophy of medicine and located the problem to an imprecise definition of medicine. They opted for a broad definition of medicine to inform their philosophy of medicine, including the epistemological and ethical issues of medicine knowledge and practice.

defined as “a systematic set of ways for articulating, clarifying, and addressing the philosophical issues in medicine” (1981a, p. 28). The philosopher’s role *vis-à-vis* medicine is to apply a critical and dialectical methodology to address philosophical issues in medicine, especially the clinical encounter. The aim of the philosophy of medicine is to account for “the whole domain of the clinical moment” (Pellegrino and Thomasma, 1981a, p. 28).

Importantly for Pellegrino and Thomasma, philosophy of medicine functions both descriptively and normatively: “The philosophy of medicine seeks explanations for what medicine is and ought to be, in terms of the axiomatic assumptions upon which it is based” (1981a, p. 30). It is this spirit that a philosophy of medicine is developed herein, especially in terms of metaphysics, epistemology, and ethics of medical knowledge and practice. The driving question for this approach involves the nature of medicine itself. However, before addressing that subject the question of whether philosophy of medicine exists must be entertained first.

2 Does Philosophy of Medicine Exist?

In the 1976 Philosophy of Science Association symposium on the philosophy of medicine and its relationship to the philosophy of science, Tristram Engelhardt also responded to Shaffer’s assertion that “there is no subject matter unique to medicine for a philosophy of medicine to address” (1977, p. 94). To the question, “Is there a philosophy of medicine?,” which also served as the title of his lecture, Engelhardt not only gave an affirmative answer but delineated weak and strong senses for a philosophy of medicine. The weak sense pertains to issues such as bioethics and mind-body dualism and is comparable to Pellegrino’s philosophy *in* medicine. In a strong sense philosophy of medicine is concerned with notions specific to medicine, such as health and disease. What distinguishes philosophy of medicine from philosophy of biology is that the notions of health and disease are not so much species problems but individual human problems: “What counts as health and disease for humans depends upon very complex judgments concerning suffering, the goals proper to humans, and, for that matter, the form or appearance proper to humans” (Engelhardt, 1977, p. 102).

In editorial remarks to a special issue of *The Journal of Medicine and Philosophy*, which marked the journal’s decennial issue, Engelhardt reviewed the rise of contemporary philosophy of medicine as a discipline, including the founding of the journal, the establishment of a President’s Commission, and numerous books and essays on the subject. “There is now,” concluded Engelhardt, “a philosophy of medicine. To demonstrate its existence, one need not be able to show that the issues examined in the philosophy of medicine are irreducible to issues in other branches of philosophy. Though this likely can be shown,” he continued, “it is enough to demonstrate the success of examining together the cluster of philosophical issues that has come to constitute the philosophy of medicine. The last decade has more than established this point" (1986a, p. 7).

Pellegrino followed these comments with an essay, in which he argued on two counts for the existence of philosophy of medicine as a distinct discipline. The first is that medicine is not simply the summation of the individual disciplines that comprise it. "Medicine," claimed Pellegrino, "calls upon insights, knowledge, skills, and techniques from science, art, and the humanities, but for a distinctive and defined end [healing this patient] that is not the end of any of these other disciplines. The philosophy of medicine, therefore," he concluded, "is not synonymous with the philosophy of biology, literature, history, or sociology, though each may contribute to medicine's specific enterprise" (1986, p. 13). The second count is that philosophy of medicine is distinct from medicine itself. Philosophy of medicine, although examining issues that overlap with medicine, treats medicine, however, as its subject matter. Again, Pellegrino concluded that philosophy of medicine "seeks to understand and define the conceptual substrata of medical phenomena" (1986, p. 14).

In the early 1990s Arthur Caplan argued that although there is no reason why philosophy of medicine cannot exist, it does not. Just as Shaffer posed as a foil to force clarification of the notion of philosophy of medicine, so did Caplan. Caplan's assertion for the non-existence of philosophy of medicine depended on his definition of it: "The philosophy of medicine is the study of the epistemological, metaphysical and methodological dimensions of medicine; therapeutic and experimental; diagnostic, therapeutic, and palliative" (1992, p. 69). Given this definition, he maintained that philosophy of medicine is really a sub-field of philosophy of science. And its goal or focus should be epistemological rather than ethical.

Caplan (1992) discussed three possible responses to his thesis for the non-existence of philosophy of medicine. The first is agreement both with his definition for the philosophy of medicine and with his conclusion that philosophy of medicine so defined does not exist. The second response is agreement with the non-existence conclusion but disagreement over his definition for the philosophy of medicine. He recognized that his definition is narrow in scope and that some may want to expand it to include ethics. Caplan, however, contended that ethics is normative while philosophy need not be. The final response is acceptance of the definition but rejection of the non-existence conclusion. Caplan noted that those who make this objection often point to the published literature and professional meetings concerned with philosophy of medicine. Although he admitted the impressive nature of this evidence, it is, in principle, inadequate to defend the existence of philosophy of medicine.

According to Caplan, the philosophy of medicine does not exist because it does not meet the necessary criteria for recognition as a field or discipline. Caplan identified three criteria to define a field. The first is "a subject must be integrated into cognate areas of inquiry" (1992, p. 72). In other words, the discipline must cohere with other well defined disciplines. For Caplan, philosophy of medicine is more like an “intellectual island” on an otherwise coherent “intellectual map” of disciplines. Second, a discipline requires a “canon…a set of core readings, articles, books and case studies which are taught to those wishing to enter the field and cited by those who see themselves as working collegially in the field” (1992, p. 72). Caplan’s claim was that philosophy of medicine lacks such a canon. Finally, “to be a field an inquiry ought to have certain problems, puzzles and intellectual challenges that define its boundaries” (Caplan, 1992, p. 73). Other than the notions of disease and health, philosophy of medicine fails this criterion as well.

Next, Caplan raised a challenging question: “So, if the philosophy of medicine does not meet the criteria that would confer disciplinary or sub-disciplinary status on the work that has gone on to date in its name, is that a bad thing?” (1992, p. 73). His answer was an emphatic “yes” for the following reasons. First, philosophy of science has too long ignored the applied branches of science that could breathe new life into stale answers to questions like theory development or evolution. Philosophy of medicine could assist in this endeavor. Second, a robust philosophy of medicine is sorely needed for bioethics. Finally, philosophy of medicine could contribute to the development of medicine itself in terms of clinical trial design or explicating notions of pain and suffering. Caplan concluded that “while there are no in principle reasons why the philosophy of medicine cannot exist, it does not yet exist” (1992, p. 74).

Henrik Wulff (1992) provided commentary on Caplan’s article. He began by dividing participants at meetings on medicine and philosophy into three categories. The first consists of professional philosophers, who use medicine to do philosophy. The second consists of medical professionals who approach philosophy as a hobby and of professional philosophers who engage philosophical problems from a medical perspective. The last category consists of medical professionals who have formal training in philosophy and those who have no training in philosophy because of professional obligations.

According to Wulff, Caplan is a member of the first category and being a member of this group accounts for Caplan’s denial of philosophy of medicine’s existence. However, from a medical perspective philosophy of medicine—although not as robust as it should or could be—is a vital part of contemporary medical thinking, especially for medical professionals of the third category who are too busy in their practices to engage the medical problems from a philosophical perspective. In conclusion, Wulff beckoned professional philosophers of the second category to “come to my support and argue that philosophy of medicine does exist as a medical subdiscipline, if not as a philosophical one” (1992, p. 85).

In presaging responses to the thesis of the non-existence of philosophy of medicine, Caplan was certainly correct that the thesis would be challenged. However, only a few took exception to his definition for philosophy of medicine. Most of the debate focused on whether philosophy of medicine met the criteria necessary for defining a field or discipline, and only a few challenged whether the criteria themselves are met. For example, although Vic Velanovich (1994) agreed with Caplan’s conclusion, he claimed that philosophy of medicine is a developing field of inquiry, in terms of John Dewey's notion of the logical development of a discipline.[4]

As for Caplan's first criterion, Velanovich admitted that much work remains to integrate philosophy of medicine into other disciplines. For the second criterion, he cited Jeffery Spike's article on teaching philosophy of medicine, which he noted Caplan also referenced, and Wilfried Lorenz's list of works on theoretical surgery, as providing a foundation for development of a canon. Finally, Velanovich listed a series of metaphysical, ontological, and epistemological questions, concerning medical causation, reductionism, and explanation, which he claimed provides critical problems and puzzles for philosophy of medicine. "I have argued," concluded Velanovich, "that [philosophy of medicine] should be considered a developing field which will eventually meet all the criteria Caplan imposes on any endeavor to be called such" (1994, p. 81).

Although Caplan's thesis for the non-existence for philosophy of medicine was critiqued mainly in terms of the criteria for establishing a discipline, his thesis was also criticized by a few with respect to his definition for philosophy of medicine. Some philosophers of medicine felt Caplan's definition was too narrow and wanted to broaden it. For example, Engelhardt and Kevin Wildes argued for an expanded conception of the philosophy of medicine. Although one could argue, *pro* Caplan, that philosophy of medicine engages no unique problems *vis-à-vis* philosophy of science or biology Engelhardt and Wildes held, *contra* Caplan, "there would still be merit in exploring the ways in which philosophical study and analysis can be directed to the understanding of medicine" (1995, p. 1683). Kenneth Schaffner and Engelhardt argued for an even broader conception for philosophy of medicine, "as encompassing those issues in epistemology, axiology, logic, methodology and metaphysics generated by or related to medicine" (1998, p. 264). They included not only the natural sciences but also the social sciences, e.g. George Engel's biopsychosocial model.

In response to the broad or expansive definition for the philosophy of medicine, Pellegrino insisted that such a definition "dilutes the specificity of philosophy of medicine and weakens the identification of a definite set of problems" (1998, p. 319). He then proposed a more narrow definition for philosophy of medicine as "a critical reflection on the matter of medicine—on the content, method, concepts and presuppositions peculiar to medicine *as medicine*" (Pellegrino, 1998, p. 325). The goal of this relationship is to understand medicine *per se*, i.e. the ultimate reality of what constitutes medicine beyond the entities that are studied in medicine. To that end, Pellegrino claimed that the philosophy of medicine requires a precise or narrow definition of medicine.

Although medicine depends on the natural sciences, according to Pellegrino, it is not simply a branch of them. Rather, medicine is concerned with more than obtaining truth but the truth applied specifically to the health of individuals and

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[4] What Dewey meant by the logical development of a discipline, according to Velanovich, is that a discipline's rational or cognitive dimensions evolve along with the discipline's efforts to inquire into a given phenomenon.

societies. Tantamount to that goal is the clinical encounter between physician and patient. "Philosophy of medicine," concluded Pellegrino, "is concerned with the phenomena peculiar to the human encounter with health, illness, disease, death, and the desire for prevention and healing" (1998, p. 327). The basis for philosophy of medicine is the *telos* of medicine: the caring of the physician for the patient's healing (Pellegrino, 1998).

Wildes (2001) responded to both Pellegrino and Caplan, charging them with failure to engage the broader social context in which medicine is practiced. Pellegrino's and Caplan's approaches were too narrow and myopically fixated on the essence of medicine, with Caplan's approach being too analytic, in terms of an applied science, and with Pellegrino's being too phenomenological, in terms of the patient-physician encounter. According to Wildes, the broader approach takes into consideration the social or cultural dimension of medicine: "medicine is a socially constructed set of practices and philosophy of medicine must take this social dimension into account if it is to be therapeutic [in terms of medicine's current crisis]" (2001, p. 74). By social construction, he meant that medicine is practiced in a specific social or cultural context. After all, he argued, notions like health and disease are culturally laden. "For philosophy of medicine to scrutinize medical practice," concluded Wildes, "it too must take the social structures into account and not be too narrowly construed" (2001, p. 85).

Pellegrino (2001) responded to Wildes by defending an emphasis on the *telos* of medicine, as its distinguishing characteristic, in terms of patient-physician relationship as a realistic healing encounter. "Clearly, this relationship was not the whole of medicine," argued Pellegrino, "but it is still in my opinion that which makes it a distinct human activity" (2001, p. 171). In fact, a teleologically based philosophy of medicine is "the only tenable basis for an ethics of the healing professions as a whole in an era of widespread moral and social pluralism like ours" (Pellegrino, 2001, p. 173). Pellegrino admitted that he did not emphasize the primary importance of the social for defining the philosophy of medicine. His reason was that he follows an Aristotelian projection from the virtuous individual to the virtuous society. It is in this context that Pellegrino claimed he engages the social dimension of medical practice in his philosophy of medicine. For Pellegrino, Wildes' emphasis on the social construction of medicine resembles nominalism and "allows for no permanent theory of medicine and therefore allows no permanent or stable ethics of the profession" (2001, p. 177).

Recently, William Stempsey has offered a broader conception of the philosophy of medicine. "Philosophers of medicine today are addressing not only issues of medical ethics and the doctor-patient relationship," according to Stempsey, "but also models of medicine, visions of human nature, concepts of health and disease, conceptions of the body, epistemological standards of evidence and other topics" (2004, p. 246). He identified philosophy of medicine as a philosophical sub-discipline and situated it thusly with respect to three factors.

The first is one's metaphysical worldview used to divide up the world. For example, whether one holds to holism or reductionism profoundly affects one's medical knowledge and practice. Philosophy of medicine can certainly help to clarify the metaphysical foundations of medicine. The second factor is one's understanding of cognate disciplines. Stempsey acknowledged that the relationship between medicine and philosophy is historically an enriching one for both disciplines and that "even in the face of changing perspectives on the disciplines of philosophy and medicine, there have always been a philosophy lurking behind medical thought and practice" (2004, p. 248). The final factor is the perspective from which the disciplines are viewed. Stempsey noted that much of the controversy over the existence of philosophy of medicine stems from a myopic view of the disciplines: "We should not let narrow disciplinary boundaries blind us to the richness that is inherent in a broad view of the philosophy of medicine" (2004, p. 250). In conclusion, he beckoned for a "medical studies" discipline that incorporates historical, philosophical, and social dimensions of medical knowledge and practice.

3 Philosophy of Medicine: Models of Medical Knowledge and Practice

As evident from the title of the book I opt for the philosophy of medicine relationship, which I hold to be a sub-discipline of philosophy. The relationship between the two disciplines is more than simply philosophy *and* medicine in that they share more than common problems and is more than philosophy *in* medicine in that philosophers use medicine not just to do philosophy but to understand the nature of medicine itself. I define philosophy *of* medicine specifically as the metaphysical and ontological, the epistemological, and the axiological and ethical analyses of different models for medical knowledge and practice. Such a definition is rooted in a standard topology for philosophical analysis. The aim of this analysis is to unpack the nature of medicine itself as articulated in the question: What is medicine? This question is at the center of the quality-of-care crisis facing modern western medicine and represents the primary issue for my philosophy of medicine.

By model is meant an idealized notion or representation of a system or phenomenon that is proposed as a theoretical explanation or a construct.[5] In other words, models are idealizations and not the real thing, i.e. they are notional. They represent a phenomenon or system and are used to explain it, often from an abstract perspective. As such models are constantly in flux and are either advancing or degenerating, in terms of their explanatory power. Part of that power is the ability to predict future events. Models then can assist in visualizing how the natural and social worlds operate and in manipulating those worlds for better or worse. The two models of modern western medicine analyzed herein are the biomedical and the

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[5] Murphy provides a precise definition for model: "A model is a representation of a complicated process as an abstract set of relationships among its known or conjectured components" (1997, p. 264).

humanistic or humane models. Their histories are intertwined and a brief examination of them provides a necessary background for conducting the philosophical analysis found within this book.

Many histories of modern western medicine trace medicine's origins to the dawn of human history (Ackerknecht, 1982; Porter, 1998). Certainly the first chief figure in western medicine was Hippocrates. The Hippocratic corpus influenced western medicine for over a millennium. Even today, medical students often recite in unison a version of the Hippocratic Oath as part of their graduation exercises. The next major figure in the western medicine was Galen, whose influence again was also felt for over a millennium. Not until the scientific revolution of the sixteenth and seventeenth centuries, especially with the anatomical work of Andreas Vesalius on the human body and the experimental work of William Harvey on the circulation of the blood, was Galen's approach to medical knowledge and practice challenged. By the end of the nineteenth century and the beginning of the twentieth century, the biomedical or allopathic model of medicine became the dominant model for medical knowledge and practice.

In the United States the biomedical model had its origins in the late nineteenth century, especially with the importation of physiology or experimental medicine from Europe (Duffy, 1993). One of the chief figures—if not the chief figure—in the development of experimental medicine was Claude Bernard in Paris (Olmsted and Olmsted, 1952). American physicians traveled to Europe and returned to introduce the latest in scientific advances (Fye, 1987). Bernard had a major impact on the development of American medical science through several students, including William Henry Anderson, John Call Dalton, Jr., Frank Donaldson, and Silas Weir Mitchell (Carmichael, 1972; Marcum, 2004a). Bernard's influence was keenly felt in American education, where the use of animals to illustrate physiological principles during lectures revolutionized medical pedagogy: "We venture to say that demonstrative teaching in physiology in [America] is to be attributed to the influence of Bernard's works" (Flint, 1878, p. 173). Besides Bernard other European scientists, including Michael Foster in Cambridge and Carl Ludwig in Leipzig, also influenced the development of experimental medicine in the United States (Fye, 1987; Geison, 1978).

A major event in the origins of the biomedical model in the United States is traditionally claimed to be the opening of The Johns Hopkins Hospital in 1889, followed four years later with the launching of the Hopkins medical school (Chesney, 1943). Entrance into the new medical school required a rigorous scientific undergraduate education and the Hopkins faculty taught its medical students a medicine shaped by current scientific knowledge. Hopkins set a standard that became the benchmark for medical education and practice in the United States, if not the world (Ludmerer, 1985). Besides Hopkins, the founding of the Rockefeller Institute for Medical Research in 1901 also contributed significantly to the development and establishment of the biomedical model in American medicine (Corner, 1964). Finally, Abraham Flexner's 1910 Report to the Carnegie Foundation was influential in promoting pedagogical changes in medical education to reflect the focus on scientific medicine (Flexner, 1910; Boelen, 2002).

Today, the biomedical model is the prevailing model of medical knowledge and practice within the United States of America, as well as in other western and developed countries, and is also becoming the dominant model in eastern and underdeveloped countries. In this model, the patient is reduced to a physical body composed of separate body parts that occupy a machine-world. The physician's emotionally detached concern is to identify the patient's diseased body part and to treat or replace it, using the latest scientific and technological advances in medical knowledge sanctioned by the medical community. The outcome of this intervention is to cure the patient, thereby saving the patient from permanent injury or possibly death.

Although the biomedical model provides major advances in American medicine, one of its chief underlying problems is the alienation of the patient from the physician. "The public perceives medicine," claims Miles Little, "to be too impersonal" (1995, p. 2). Moreover, by reducing the patient to a collection of body parts, the patient as a person disappears before the physician's clinical gaze (MacIntyre, 1979). The loss of the patient as a person from the physician's clinical gaze has led to a quality-of-care crisis, which afflicts American medicine today, and has eroded the intimacy of today's patient-physician relationship from a perceived intimacy of an earlier age in the United States.[6] For example, much of the infrastructure supporting current American medical practice favors the physician's schedule at the expense of the patient's lifestyle and at times the patient's health and wellbeing. Importantly, Engel identified the origins of this crisis in the "adherence to a [biomedical] model of disease no longer adequate for the scientific tasks and social responsibilities of either medicine or psychiatry" (1977, p. 129). In other words, the crisis arose over bracketing the psychological and social dimensions associated with the patient's experience of illness and the physician's inability to understand the patient as an ill *person*.

In response to the quality-of-care crisis, some practitioners of modern medicine have proposed over the past several decades humanistic modifications of the biomedical model, in order to reinstate the humanity of both patient and physician into medical knowledge and practice. Michael Schwartz and Osborne Wiggins broadly define humanistic or humane medicine accordingly: "medical practice that focuses on the whole person and not solely on the patient's disease" (1988, p. 159). They do not reject scientific medicine but enlarge its scope to include the patient's psychological and social dimensions. Davis-Floyd and St. John concur with this assessment of the humanistic models: "Humanists wish simply to humanize technomedicine [biomedicine]—that is, to make it relational, partnership-oriented, individually responsive, and compassionate" (1998, p. 82).

Humanistic or humane modifications of the biomedical model range from more conventional efforts to reform the biomedical model, such as Engel's biopsychosocial model, to the more unconventional efforts by phenomenologists to replace it

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[6] Of course, humanistic or humane practitioners do not reject the advances of the biomedical model for a myth that medicine prior to it was somehow better because of the intimacy between the patient and physician (Engel, 1977, p. 135).

(Toombs, 2001). In humanistic models, the patient is recognized as a person (or self) or at least an organism composed of body and mind occupying a lived context or a socioeconomic environment. Under the practitioner's empathic gaze and care, the informed and autonomous patient is cured and at times even healed using generally scientific evidence-based or traditional medical therapies but possibly—and then only as a last resort—nontraditional therapies.

In the first part of this book I examine initially the metaphysical boundaries of the biomedical and humanistic models, in terms of medical worldviews in which the models are embedded (Table 1). Specifically, I analyze the biomedical worldview in terms of its metaphysical position of mechanistic monism and its metaphysical presupposition of reductionism, and its ontological commitment to physicalism or materialism. For the practitioner of this model the patient is a material object that is reduced to a collection of physical parts. Importantly the mind is not a separate non-material entity but a functional property of the brain, as the pumping of blood is the functional property of the heart.

According to the biomedical model, the patient is a machine composed of individual body parts that, when broken or lost, can be fixed or replaced by new parts. Moreover disease, whose cause can be identified by scientific analysis, is an objective entity. It is often organic and seldom, if ever, psychological or mental. The notion of health involves the absence of disease or the normal functioning of body parts. Physicians are interested in identifying only the physical causes or entities that are responsible for a patient's disease. Once identified by objective diagnostic procedures, treatment then is generally based on some type of drug or surgical procedure. Appropriation of the proper therapeutic modality, selected by the physician, is based on statistical analysis of data obtained from randomized clinical trials. Thus, the physician is a mechanic or technician, whose task is to determine which part of a patient's body is broken or diseased and to mend or replace it.

The biomedical worldview is modified in humanistic or humane models, with a metaphysical position that is often dualistic, composed of two non-reducible entities—the body and the mind. Other humanistic models operate from a holistic position, in which the person (or self) represents an integrated whole not only in terms of the individual but with the person's environmental context or lifeworld. Although practitioners of humanistic models of medical knowledge and practice appreciate biomedical model's metaphysical presupposition of reductionism and the gains it provides for the technical side of western medicine, they often reject it as an insufficient presupposition for medical knowledge and practice. They generally subscribe to some form of emergentism, in which properties of the system are not determined by the properties of the individual parts but transcend them. Practitioners of humanistic models share to some extent the biomedical model's ontological commitment to physicalism or materialism; however, this commitment is tempered in the humane models by including the patient's psychological or mental state—and for some, the spiritual state.

Instead of reducing the patient to the physical body alone, the humanistic or humane practitioner, who is not just a mechanic, encounters the patient as a person composed of both mind and body. Importantly, the mind and body often influence the behavior and state of each other in a reciprocal manner. Thus, the mind and body are complementary aspects of the patient and both must be considered when making a diagnosis or choosing a therapy. For the patient's illness may be more than simply organic (a disease) but may also include the psychological and social (an illness or a sickness, respectively). Causation then is more than physical but also includes information concerning the individual patient *qua* person. Moreover, rather than being considered just a machine composed of individual parts separate from any background or framework, the patient is viewed as an organism or a person within a socioeconomic environment or cultural background. And as an organism or a person the patient is more than simply the sum of separate body parts but also exhibits properties that surpass the aggregation of those parts. Thus, an important ontological commitment for some humanistic models is organicism.

In the second part of the book, I examine the epistemological boundaries of the biomedical and humanistic or humane models (Table 1). Medical practice within the biomedical model is based on objective or scientific knowledge and relies on the technological developments in the natural sciences, especially the biomedical sciences. The acquisition and implementation of medical knowledge reflects the techniques and procedures of these sciences. For example, the randomized, double-blind, concurrently controlled trial is considered the primary or "gold" standard for determining the efficacy of a new drug or surgical procedure. Such scientific practice defines acceptable knowledge and practice of medicine within the biomedical model. Medical knowledge in this model is generally based on mechanistic causation. Finally, epistemic claims in the biomedical model depend on the logical relationship of propositional statements obtained from empirical laboratory experiments and clinical studies. The trajectory of medical knowledge and practice is from the laboratory to the bedside. There is often little, if any, room in this model for the intuitive or emotional dimensions of either the physician or patient and medical knowledge is therefore generally impersonal.

Although the humanistic or humane models share many epistemological features with the biomedical model, they also rely on a practitioner's emotions and intuitions. Emotions and intuitions are not necessarily impediments to sound medical judgment and practice; but when judiciously utilized and constrained by the epistemic and empirical boundaries of the biomedical model, they enable a physician to access information about a patient's illness that may exceed quantified data, e.g. laboratory test results. This information obtained from a practitioner's use of emotional and intuitional resources is subjective and human. Behind such information is the face of the "Other" (Tauber, 1995). The type of knowledge obtained in this model depends on informational causation, where a patient's psychosocial dimension is an important factor in diagnosing and treating illness. Moreover, the patient is not simply a compliant or passive agent during diagnosis or treatment but can also be an active participant. The patient as an informed cognitive agent is part of the process of humanistic medicine.

Table 1 Comparison of metaphysical, epistemological, and ethical boundaries of the biomedical and humanistic models of western medical knowledge and practice

	Metaphysics	Epistemology	Ethics
Biomedical model	Mechanistic monism	Objective knowledge	Emotionally detached concern
Humanistic models	Dualism/holism	Subjective knowledge	Empathic care

In the third part of the book, I explore the axiological and ethical boundaries of the biomedical and humanistic or humane models (Table 1).[7] The biomedical model stresses the scientific problem-solving aspect of medical practice and is based on a value of objectivity. Diagnosis and treatment of a patient's disease are puzzles that concern the physician-scientist *qua* mechanic or technician. Diagnosis of the disease depends on a technology that reduces the patient to a set of objective data, from which the physician diagnoses the patient's disease. And from that diagnosis, the physician then chooses the appropriate therapeutic modality, often with little patient consultation. The ethical stance of the physician is a concern to save the patient from the disease and ultimately from death. According to the biomedical model, death is defeat and is generally avoided at all costs. The physician's concern for the patient is detached from the emotions of either the physician or patient. Moreover, the patient's relationship to a physician is passive. The physician is the authority figure with the knowledge and power to save the patient. Thus, the physician's relationship to a patient is one of dominance, as represented by paternalism.

Instead of the physician being rationally concerned in an emotionally detached manner for the patient's diseased body part, the humanistic or humane practitioner cares both rationally and emotionally for the health of the patient *qua* person. The underlying value of this type of medical practice is empathy, which shapes a physician's stance. Through this stance, the physician may become aware of the "eidetic" features of a patient's illness, including losses of wholeness, certainty, control, freedom to act, and the familiar world (Toombs, 1993). The physician is no longer the locus of supreme authority and power in curing a patient but a first-among-equals, a co-participant with a patient and other healthcare providers. In other words, the patient is an autonomous person who deserves respect for helping to make the choice as how to proceed therapeutically. Moreover, the physician recognizes that a patient's mind/body often cures itself and that often the role of both the physician and patient is to assist in that process and not to hinder it. The patient-physician relationship is one of mutual respect, for the role and contribution of each other in the healing process. Finally, death is not necessarily a defeat according to this model but another or possibly final stage in the patient's life.

In a concluding chapter, I examine the nature of medicine by addressing the question, "What is medicine?"—certainly the chief question for any philosophy of

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[7] In this part the various normative ethical theories, including principlism, are also examined.

medicine. The answer to this question is examined first in terms of the historical debate over the art and the science of medicine, followed by the contemporary debate between evidence-based and patient-centered medicine. In a final section, I explore the nature of medicine in terms of the biomedical model, which focuses on the *logos* of medicine that in turn drives its *ethos*, and of the humanistic or humane models, which focus on the *ethos* of medicine that in turn drives their *logos*. My proposal is that modern medicine must undergo a revolution not in terms of its *logos* or *ethos* but in terms of its *pathos*. Specifically, *pathos* can transform the *logos* of technique and information into wisdom, a wisdom that can discern the best and appropriate way of being and acting for both the patient and the physician. *Pathos* can also transform the *ethos* of the biomedical physician's emotionally detached concern or the humane physician's empathic care into a compassionate love that is both tender and unrestricted. This love is not a mawkish sentimentality but a vigorous passion that enters the suffering of illness. Only a wise and loving stance will relieve American medicine of its quality-of-care crisis.

4 Summary

The philosophy of medicine explicated herein is based on the analysis of the metaphysical, epistemological, and ethical boundaries of the biomedical and humanistic or humane models of medical knowledge and practice, in order to address the current quality-of-care crisis in contemporary medicine. That crisis requires a close philosophical analysis in these terms to provide a systematic framework to assess the various humanistic or humane modifications to the biomedical model. Such an assessment is required to choose wisely among the various options for medical knowledge and practice, especially in terms of defining the very nature of medicine itself. For the quality-of-care crisis is really a crisis over the nature of medicine. Should medicine be strictly a science? What role does or should the art of medicine play in medical practice? An important means of addressing these questions and others like them and the quality-of-care crisis is through philosophy, as well as through history, sociology, anthropology, and the other social sciences. The aim of the book is to provide a systematical analysis of the nature of medicine from a philosophical perspective, i.e. to explore the answers to the question, "What is medicine?," and to assist, in part, in the resolution of the quality-of-care crisis facing modern American medicine.

Although the future direction of modern medicine cannot be presaged or even the direction it should take cannot be dictated, it is clear that its deep-seated commitment to the human condition cannot be lost without tremendous impairment to its main task: healthcare. By investigating the philosophical boundaries of the competing and evolving models for medical knowledge and practice, it is evident that there is no simple solution to the crisis facing modern medicine. Certainly there is a paradigmatic shift underway in medicine and is required if medicine is to succeed in the twenty first century.

Part I
Metaphysics

Metaphysics, as a distinct subject within the western intellectual tradition, has its origins in Aristotle (384–322 BC). Although he did not coin the term, ancient editors of his works did and his treatise by that title is one of the first systematic explorations of the subject. For Aristotle (2001), metaphysics, which literally means "after or beyond physics," is actually prior logically to physics or the natural sciences. In contemporary philosophy, metaphysics deals "with questions that in some ways lie deeper than physics and most other branches of human enquiry: questions concerning the fundamental assumptions and theoretical foundations of these other inquiries" (Horner and Westacott, 2000, p. 1).

As western philosophy developed metaphysicians became concerned with the nature of objects that make up the world, whether natural or social, real or constructed. The topics covered in contemporary metaphysics range from the notion of God to that of time and space (Crane and Farkas, 2004). For example, what constitutes a person or the self is a vibrant area of metaphysical inquiry. Metaphysics is also concerned with the fundamental or universal properties or features of objects or, more technically, with ontology. Finally it is involved with the relationship among these properties, especially in terms of causation.

In this part, the metaphysical boundaries of the biomedical and humanistic or humane models of modern medicine are examined through an analysis of the larger cultural and scientific worldviews in which they are embedded. For our distinct views of the social and natural worlds shape the biomedical and humanistic or humane models. These worldviews often allow practitioners of the biomedical and humanistic models to practice in different worlds. In an initial chapter, I investigate the medical worldviews of the biomedical and humane models in terms of their metaphysical positions or stances, metaphysical presuppositions or assumptions, and ontological commitments. In the next chapter, the notions of causation and realism are examined, especially as they relate to medical knowledge and practice. Then I finally explore in the remaining chapters the specific metaphysical and ontological issues of the biomedical and humane models, including the nature of the patient, disease and health, illness and wellbeing, and diagnosis and therapeutics.

Chapter 1
Medical Worldviews

A worldview or *eine Weltanschauung*, originally coined by Immanuel Kant (1724–1804) in the *Critique of the Power of Judgment* (2000), is a notion composed of beliefs that allow us to make sense of the world and to act in it.[1] Although Kant used the term to account for the sense perception of the world, it has since then taken on a more expansive meaning. For example, the German philosopher, Wilhelm Dilthey (1833–1911), defined a worldview in terms of what is known about the world and how that knowledge is judged and responded to.[2] Many contemporary definitions emphasize some facet of Dilthey's definition. The most common definition takes a worldview to be an all-encompassing philosophy of life, composed of a personal or a social ideology. For example, Ninian Smart (2000) uses the notion of worldview to examine traditional beliefs and feelings associated with various world religions. Although he avoids defining the term, he does discuss parameters essential to a worldview, such as the mythical, emotional, and ethical.

Philosophers of science have also proposed definitions of a worldview. For example, Michael Polanyi (1891–1976), in contradistinction to logical positivism, claimed that "all knowledge is shaped and guided by gestaltlike frameworks and is both tacit and personal" (Naugle, 2002, p. 187). Richard Dewitt provides a rather general definition of worldview: "a system of beliefs that are interconnected" (2004, p. 3). He then illustrates it with an example of the Aristotelian worldview that is made of interconnecting beliefs, such that the earth is located at the center of the universe and is stationary. Other examples of scientific worldviews include the Newtonian worldview in which the world is viewed as a giant machine or the Darwinian worldview in which the biological world is viewed as evolving entities. Thus, scientific worldviews are defined by their fundamental beliefs and commitments to how the world is and how to investigate its nature.

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[1] For an extensive discussion of the origins and use of the notion of worldview, see Naugle (2002).

[2] Dilthey (1960) identified three recurrent worldviews in history: naturalism or the material world, idealism or freedom of personal agency, and objective idealism or monism. Although truth among the worldviews is dependent on or is relative to a particular worldview, within a specific worldview truth is objective.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

Table 1.1 Comparison of metaphysical positions and presuppositions, and ontological commitments of the biomedical and humanistic models of medical knowledge and practice

	Metaphysical Position	Metaphysical Presupposition	Ontological Commitment
Biomedical model	Mechanistic monism	Reductionism	Physicalism / materialism
Humanistic models	Dualism/holism	Emergentism	Organicism

The philosopher of physics, Abner Shimony, has proposed another definition of worldview that is more precise from a metaphysical perspective: a worldview represents “a set of attitudes on a wide range of fundamental matters” (1993, p. 62). Attitude refers to a stance or position taken toward the world, especially in terms of a mental attitude and the assumptions associated with the world’s ontological nature. For a scientific worldview, a set of attitudes includes the various stances or positions and assumptions or presuppositions that are important for formulating scientific theories, laws, and hypotheses to account for the ontological entities that compose the natural world. As such, then, worldview is a metaphysical notion and is analyzed herein in terms of metaphysical positions and presuppositions, as well as ontological commitments.

Modern medicine is certainly part of a larger worldview that constitutes western culture. In this chapter, the metaphysical positions, along with the metaphysical presuppositions and ontological commitments, which ground the biomedical and humanistic or humane models, are discussed, before examining the other metaphysical issues concerning these models. The metaphysical positions or stances that a physician may take towards a patient and other medical entities include monism, dualism, or holism. Associated with these positions or stances are the metaphysical presuppositions of reductionism and emergentism, as well as the ontological commitments of physicalism or materialism and organicism (Table 1.1). I begin with metaphysics, analyzing the positions, presuppositions and commitments upon which medical knowledge and practice are founded; for they influence and constrain the ontological entities—such as bodies, persons, and drugs—and the metaphysical concepts—such as causation, disease, and health—that compose medical worldviews.

1.1 Metaphysical Positions

A metaphysical position is an important component for constructing worldviews, since it defines the fundamental attitude or stance towards the world’s constitution. In this section, the metaphysical positions of mechanistic monism that constitutes the biomedical worldview and of dualism/holism that compose humane models are discussed and analyzed.

1.1.1 Mechanistic Monism

The metaphysical position of the biomedical model is mechanistic monism. By monism is meant the notion or principle that there is one ultimate substance that constitutes the world (Pojman, 1998). For the biomedical model, this ultimate substance is matter and its attendant manifestation of energy and the forces that interact among and on material entities. Monism, in terms of what constitutes the world, must be distinguished from dualism, which holds that there are two ultimate substances, and from pluralism, which holds that there are three or more ultimate substances.

The monistic metaphysical position of the biomedical model in terms of its ontology is physicalism or, the older manifestation, materialism.[3] Physicalism or materialism, however, is but one type of monism. There is the traditional antithesis to materialism or physicalism, idealism, which holds that mind or spirit is the ultimate substance of the world (Pojman, 1998). Moreover, there is neutral monism, a position held by David Hume (1711–1776), Baruch Spinoza (1632–1677), and recently William James (1842–1910), in which the ultimate substance is neither matter nor mind but a third common substance (Pojman, 1998).

Besides the material or physical dimension to the biomedical model's monism, there is also its mechanistic dimension. The notion of mechanism refers to the parts and the relationship among them that go to make up an entity or a process. For many biomedical scientists and practitioners, a mechanism is the means by which to account for a natural entity or phenomenon. "A mechanism," according to Paul Thagard, "is a system of parts that operate or interact like those of a machine, transmitting forces, motion, and energy to one another" (1999, p. 106).

Peter Machamer, Lindley Darden, and Carl Craver provide a more specific definition: "Mechanisms are entities and activities organized such that they are productive of regular changes from start or set-up to finish or terminal conditions" (2000, p. 3). And, they offer the following illustration for a mechanism: A→B→C, in which the letters represent entities and the arrows represent activities that provide the continuity in change or process of the mechanism from start to finish. Based on this notion of mechanism, then, mechanistic monism of the biomedical model is a metaphysical position in which the patient is a collection of parts and specific functions are a result of a combination of these parts, much like a machine.

1.1.2 Dualism/Holism

Most proponents of humanistic or humane models of medicine recognize and appreciate the value of the biomedical model's mechanistic monism, especially in terms of the technical advances for medical knowledge and practice; however,

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[3] Today, physicalism is the preferred term because of the apparent restrictive nature of materialism. In other words, the physical includes not only matter but also forces. Materialism does not necessary include forces.

this position is strongly tempered and, in some cases even rejected, by humane practitioners. Often they temper the mechanistic monism of the biomedical model, in which the mind is equated with the brain, by including the patient's psychological and social dimensions as separate, non-reducible, etiological factors in the diagnosis of an illness and as therapeutic factors in the patient's treatment and recovery. For example, George Engel argued that although the biochemistry behind a disease like diabetes is important in terms of treating the patient, the patient's experience of the symptoms of the illness is also critical: "how [the symptoms of diabetes] are experienced and how they are reported by any one individual, and how they effect him, all require consideration of psychological, social, and cultural factors" (1977, p. 132). By incorporating the psychological, the social, and the cultural dimensions of the patient, humanistic or humane models of medicine are grounded in dualism.

As noted above, dualism is the metaphysical position that there are two separate entities that compose reality (Pojman, 1998). Generally, these two entities are the body and the mind. For the more traditional position, which is attributed to René Descartes (1596–1650), the mind is a non-physical or thinking substance (*res cogitans*) while the body is a physical substance extended in space (*res extensa*). Whereas physical entities are extended in space and since the mind is not, then, concluded Descartes, it cannot be a physical entity. Although neither of these entities can be reduced to the other, they can interact with one another.[4] For example, the mind can give rise through an act of the will to bodily actions while the body can influence mental states through sensory perceptions. This type of dualism is traditionally called dualistic or Cartesian interactionism.

The body and mind can influence the behavior and the state of each other, i.e. their interactions are reciprocal. Importantly for many humane practitioners, the body and mind are complementary aspects of the patient and both must be considered when making a diagnosis or choosing a therapy. For the patient's illness may be more than simply organic but may also include the psychological and the informational. For example, Laurence Foss (2002) introduced a "new" dualism—"an information/matter-energy dualism"—to ground a more compassionate "mindbody" medicine. By exploring the consequences of the conjunction of the body, mind, and information, he redefined the sociobiological idea of memes ("the carriers of our sociocultural inheritance") as "self-replicating, psychological information units" (Foss, 2002, p. 142). These memes form the basis of a new dualism in which metabolic processes are linked to the patient's cognitive and emotional states.

For most humanistic or humane medical models, the entities that comprise the dualistic position not only include the body and the mind but also the patient's environmental and social or cultural context. Robbie Davis-Floyd and Gloria St. John,

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[4] Some commentators claim that Descartes held that there is no interaction between the mind or soul and body; but, Descartes identified the pineal gland as the anatomical location for the interaction between the two (Switankowsky, 2000)

for example, distinguish the basic principle of humanistic medicine in terms of connection, not only with respect to the mind-body connection, but also in terms of an expansive notion of dualism: "the connection of the patient to the multiple aspects of herself, her family, her society, and her health care practitioners" (1998, pp. 82–83). Although the metaphysic of humane medicine is generally dualism, the connection between the physical body and the mind can be material or it can be mental or psychological.

Irene Switankowsky (2000) identified four advantages of dualistic interactionism for the practice of medicine. The first is that the physician treats the patient as a whole person rather than simply as a diseased body part. The illness often affects more than simply some part of the patient's body but also other dimensions of the patient, especially in terms of existential concerns. This leads to another advantage of dualistic interactionism, which is the concern the physician exhibits for the "lived-experience" of the patient's illness. This "lived-experience" includes not only the physical disruption of illness but also the psychological and social disruption. According to Switankowsky, "the patient's body and self is an intrinsic aspect of the illness, and the treatment of the illness cannot be successful without treating both the body and the self" (2000, p. 575).

The third advantage pertains to the inclusion of both the objective and subjective dimensions of illness. Not only must a physician determine the objective evidence, including laboratory tests and accurate medical history, but also the subjective information on what the illness means to the patient. Without such information a physician may fail to communicate effectively with the patient, especially in terms of the patient's existential concerns. Finally, dualistic interactionism allows a physician to include the full range of the patient's narrative into both the diagnosis and treatment of the illness. "By attending to the dualistic aspects of illness," concludes Switankowsky, "the physician can understand the patient's illness which is an essential part of the humanistic approach to illness" (2000, p. 577).

There are several other types of dualism, besides interactionism, including epiphenomenalism, parallelism, and double or dual aspect, to which a humanistic or humane practitioner may or may not subscribe (Pojman, 1998). In epiphenomenalism, the body affects the mind but the mind does not affect the body. In other words, mental events are a residue of bodily processes but are not reducible to them. In parallelism, the mind and body are two comparable, non-reducible realities or entities that do not interact. Rather, they are two independent causal chains that operate next to or concurrently with respect to each other in a "pre-established harmony." Finally, there is the double or dual aspect theory in which body and mind are not two separate entities *per se* but two separate, non-reducible attributes or properties of the same reality or entity.

To some extent, Cassell (2004), for example, holds to the double aspect theory of dualism. Although he rejects the more classical dualistic interactionist position, in which the body and mind constitute a human person, he argues that a person is a combination or an integration of both the body and the mind. A person, then, is the single entity that exhibits the attributes of both body and mind. In this sense, he is closer to a dualistic position than the biomedical model's monistic position.

However, Cassell also rejects the reductionist monistic position. These two attributes are so well integrated in the person—through the reciprocal flow of meaning between the mind and body—that they are not reducible to each other. There is a real sense in which his position is also holistic.

Holism is the metaphysical position that "the properties and behavior of 'whole' systems or objects (cells, persons, societies, etc.) cannot be reduced to, or explained fully by reference to, the properties and behavior of their parts" (Woodhouse, 2000, p. 155).[5] In other words, the whole in terms of its properties cannot be reduced to the properties of its parts; rather, those properties emerge from the structure or configuration of the whole. Thus, the behavior of an organic being cannot be reduced to its inorganic elements but emerges from the unique structure of the organic being. For many humanistic models, then, medical entities such as patients and diseases are not reduced simply to their component parts alone. Rather, such entities are wholes that are embedded within a particular biological or social environment. Ontological holism then, in which entities are composed of parts that do not determine the properties of the whole entity, is an important metaphysical stance for many humane practitioners.[6]

1.2 Metaphysical Presuppositions

Metaphysics is also concerned with first principles or the basic presuppositions upon which an epistemic community investigates and ultimately understands or explains the world or reality. Such presuppositions play an important part in a natural science worldview. According to R.G. Collingwood (1889–1943), in *Essay on Metaphysics* (1998), the chief task of metaphysicians is to untangle the knot of presuppositions underpinning the natural sciences, in contrast to the logical positivists who denied a role for metaphysics in the generation of scientific knowledge.[7] That task involves the identification and explication of the presuppositions made by scientists to raise questions about the world. To that end, Collingwood divides presuppositions into relative and absolute.

Relative presuppositions act as both background assumptions for asking a question under one set of conditions and for answering a question under another set, whereas absolute presuppositions are always background assumptions for asking

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[5] Although some consider holism to be a vitalist position, the traditional form of vitalism posits a life force in addition to the individual components of the organism. The holistic position does not necessarily require such an additional life force (Marcum and Verschuuren, 1986).

[6] There is also theoretical or methodological holism in which certain terms of a higher order theory or law are not deducible from other terms within a lower order theory or law. In other words, an explanation emerges at a higher order that is not reducible to explanations of a lower order.

[7] E.A. Burtt (1932) also argued for the role of metaphysics, especially specific categories, in the generation of scientific knowledge.

questions and never for answering them.[8] For example, a physician may presuppose a particular disease is associated with a patient's chief complaint and ask questions accordingly. This presupposition is relative since it is used to ask questions but abandoned if the diagnosis does not substantiate it. An absolute presupposition, such that the disease is reducible to a particular mechanistic causation, is not abandoned but rather frames the diagnostic process. Importantly the logical efficacy of these presuppositions, i.e. their ability to prompt questions about the world, is independent of their truth-value; rather, this efficacy depends upon their being supposed. Thus, absolute presuppositions are required for framing questions about the natural world and are thereby critical for an analysis of the natural sciences.

There are a number of important absolute presuppositions that ground the activity of practitioners in the biomedical sciences. These include reductionism, determinism, and emergentism, to name but a few. Although these presuppositions are important for the generation of scientific knowledge, they are neither unproblematic nor universally accepted by all biomedical scientists. For example, the reductionistic assumption for the prevalent theory of cancer, the somatic mutation theory, is currently challenged by proponents of another theory based on emergenistic assumptions.[9] Consequently, there is no single set of background assumptions to which biomedical scientists assent; rather, there is a wide range of assumptions and combinations of them utilized by these scientists to generate scientific knowledge.

However, there is one background assumption that almost all practitioners in the biomedical sciences agree upon and that is naturalism. Although defining naturalism is a daunting task, for present purposes the presupposition may be taken to assert that natural phenomena are the products of natural events and forces and that human reason can comprehend these events and forces. In other words, there is no need to posit forces outside the natural realm to explain natural phenomena. Naturalism, as well as other presuppositions, is often divided into two types that are relevant for the present discussion: methodological and theoretical (de Vries, 1986).

Methodological naturalism presupposes that biomedical scientists investigate only natural phenomena and formulate physical or mechanistic explanations for those phenomena. As such, this presupposition provides a limit for developing an experimental strategy or heuristics to guide research in the biomedical sciences.[10]

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[8] Collingwood (1998) claimed Newton and his followers absolutely presupposed that some events cause others. For relative presuppositions, however, use of a measuring tape presupposes that a discrete value can be measured with it (answer to a question) and that the measurement is reliable (background assumption to asking a question).

[9] Carlos Sonnenschein and Ana Soto (1999) proposed that cancer is not a disease of defective genes but of defective tissues. Moreover, Robert Weinberg, who cloned the first oncogene and tumor suppressor gene, now advocates a heterotypic biology in contrast to his original simple reductionist position (Hanahan and Weinberg, 2000).

[10] Although science has been rather successful throughout the last three centuries, its success is no basis for justifying these presuppositions. However, Collingwood noted that practical success is an important factor in assessing presuppositions, although this is not the same as evaluating them empirically.

Since the naturalistic posture or attitude of biomedical scientists is confined only to investigation of the natural world the presupposition is impotent for raising questions about phenomena that outstrip the physical world, such as religious experience. Whether God intervenes in natural processes is an issue that simply cannot be addressed by supposing methodological naturalism.[11]

Theoretical naturalism, on the other hand, is the presupposition that natural phenomena are all there is. As Francis Crick puts it rather crudely: "You, your joys and your sorrows, your memories and your ambitions, your sense of personal identity and free will, are in fact no more than the behavior of a vast assembly of nerve cells and their associated molecules" (1994, p. 3). Underlying this statement is a belief that one's personal identity is the result of natural factors only.[12] As such, theoretical naturalism denies the existence of anything that is not natural. And it goes well beyond the limit presupposed in terms of methodological naturalism, by making empirically unwarranted metaphysical claims about the nature of reality. However, it must also be noted that the theoretical presupposition of supernaturalism also makes empirically unwarranted metaphysical claims about the nature of reality.

1.2.1 Reductionism

As noted above, the chief absolute presupposition of the biomedical model is reductionism, which is intimately associated with an ontological commitment to physicalism or materialism. "Traditionally," according to Geoffrey Hellman and Frank Thompson, "physicalism has taken on the form of reductionism—roughly, that all scientific terms can be given explicit definitions in physical terms" (1975, p. 551).[13] In this context, reductionism refers to the reduction of non-physical disciplinary terms and theories to the terms and theories of the physical sciences. Theoretical reductionism then involves the reduction of terms from different theories to the terms of a single or more basic theory (Marcum and Verschuuren, 1986). However, it is often not a straightforward process in that all the terms of the theory to be reduced are not reducible to physical terms of the reducing theory.

But reductionism also has different forms. For example, John Dupré defines it as "some range of phenomena [that] can be fully assimilated to some other, apparently distinct range of phenomena" (2000, p. 402). This is an ontological reductionism by which higher order phenomena are determined by lower order phenomena. "Ontological reductionism," claim James Marcum and Geert Verschuuren, "results

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[11] Some humane practitioners incorporate religion into their medical practice. For example, there is considerable discussion and experimentation in terms of the efficacy of prayer in healing.

[12] Although today emergentism replaces Crick's reductionism in some quarters of neurophysiology, metaphysical naturalism is still a credible presupposition.

[13] Hellman and Thompson (1975), however, provide an implicit definability thesis for a physicalism not based on reductionism. For comments on their thesis, see Earman (1975).

in a simplification of processes by denying new properties for higher level phenomena" (1986, p. 125). Finally, there is a third form of reductionism—methodological. Whereas theoretical reductionism simplifies theories and ontological reductionism simplifies the phenomena, methodological reductionism simplifies research through dissecting higher order phenomena into their constitutive components at the lower order (Marcum and Verschuuren, 1986). For example, the investigation of intermediate metabolic pathways is conducted in terms of their separate molecular components. After such investigation, the individual components are connected to generate the various pathways.

Another important presupposition of the biomedical model, and one that is often associated with reductionism and so deserves brief consideration, is determinism (Pojman, 1998). According to the notion of determinism, an event or action is shaped or determined by its antecedent events or conditions. If those preceding events or conditions are known, then the consequent event or effect is known prior to its occurrence. In a scientific version of determinism, the initial conditions along with a governing law are sufficient to predict or determine a subsequent event or effect with precision. Determinists deny the operation of chance within the unfolding of events and effects in the world. For them, there is only one possible world as determined by a natural order. This notion is in contrast to a contingent worldview in which things could have been different, given other preceding events or conditions that could not have been predetermined. This is best illustrated by the free will problem. For determinists free will is an illusion. However, if this is so then how can people be held morally responsible for their actions? This presents a conundrum for the determinists, which is not so easily answered.

1.2.2 Emergentism

The main absolute presupposition of most humanistic or humane models is emergentism. The notion of emergentism refers to the appearance of a higher order property from lower order properties (Clayton, 2004). In contrast to reductionism, the higher order property is not reducible to or deducible from the lower order properties. In other words, a higher order property of a complex entity (E_1) is emergent if it is conceivable for a different complex entity (E_2) to lack the emergent property even though E_2 is composed of the same parts as E_1 and even though those parts resemble the same structure as E_1. For exmaple, E_1 and E_2 may exhibit different behavioral patterns to a similar environmental cue.

Beginning in the mid nineteenth century, the British emergentists developed the contemporary notion of emergentism (McLaughlin, 1992). "According to British Emergentism," claims Brian McLaughlin, "there is a hierarchy of levels of organizational complexity of material particles that includes, in ascending order, the strictly physical, the chemical, the biological, and the psychological level" (1992, p. 50). Each level contains material substances specific to that level, and these substances exhibit the unique, emergent properties associated with a given level.

For example, properties like digestion and reproduction emerge from the special structure of biological organisms. John Stuart Mill (1806–1873) was one of the first British emergentists, who developed the notion in his *System of Logic* (1875). According to Mill, the emergent property of an entity, especially a living entity, is not the result of simply summing up the properties of its parts.[14]

The notion of emergentism, as an alternative position, was also central to the mechanist-vitalist debate of the late nineteenth and early twentieth centuries (McLaughlin, 1992).[15] For example, C.D. Broad (1887–1971), in *The Mind and Its Place in Nature* (1925), used the notion to address the debate. The issue was whether "vital behaviour" is essentially different from "non-vital behaviour." To resolve the debate, Broad postulated emergent or "trans-ordinal" laws in distinction from mechanistic or "intra-ordinal" laws. Emergent laws are irreducible, non-causal laws that account for higher order properties *vis-à-vis* lower order properties. These laws provide the same heuritic advantages as mechanistic laws. The only perculiarity is their unpredictability in terms of their discovery, i.e. even with exhaustive knowledge of lower order properties, emergent laws cannot be predicted.[16]

From a historical development of the notion of emergentism, Achim Stephan (1999) proposed strong and weak forms of the notion.[17] There are two strong forms that depend on the theses of irreducibility and of unpredictability. The first strong form, based on irreducibility, is synchronic emergentism. By irreducibility, Stephan claims, in agreement with Broad, that the systemic or emergent property "cannot be deduced from the arrangement of its system's parts and the properties they have 'isolated' or in other (more simple) systems" (1999, p. 51). Embedded within this notion are two types of irreducibility. The first is that behavior of the system's components is not deducible from the components in isolation or in a simple arrangement. This type of irreducibility implies downward causation from the system's arrangement onto its parts. The second type involves unanalyzable properties of the system's micro or macro structure. These properties are not causal in any mechanistic sense but rather epiphenomenal in origin.

The second strong form of emergentism is diachronic emergentism, which is predicated upon the thesis of the unpredictability of systemic properties. In this

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[14] Alexander Bain (1845–1928) in *Logic* (1887) and by George Henry Lewes (1817–1878) in *Problems of Life and Mind* (1874) further developed Mill's notion of emergentism.

[15] Other British emergentists developed the notion of emergentism in terms of the biological sciences. For example, C. Lloyd Morgan (1852–1936) appropriated the notion of emergence to evolutionary development in *Emergent Evolution* (1927). Later, Karl Ludwig von Bertalanffy (1901–1972) expounded a notion of emergentism in terms of a general systems theory.

[16] In *Space, Time and Deity* (1920), Samuel Alexander (1859–1938) also addressed the notion of life from an emergentist perspective. According to Alexander, although living organisms are based on the physicochemical order their properties emerge from and are not the result of that lower order. For Alexander, the higher order properties cannot be articulated in lower order property terms.

[17] See Clayton (2004), for a similar division.

form, systemic or emergent properties "could not have been predicted in principle before their first instantiation" (Stephan, 1999, p. 49). Such properties are considered to be novel. The thesis of novelty involves the emergence of new properties from the different assemblage of parts. The thesis of unpredictability may be the result of variability or indeterminacy in the structure generating the novel property or what Stephan calls the "unpredictability of structure." Structural unpredictability gives rise to novel properties, when their creation is shaped by "laws of deterministic chaos." Another reason for unpredictability is that, even for structures that are predictable, the property is irreducible. Since a novel property is irreducible, it is by definition, unpredictable in terms of its first occurrence.

There is one weak form of emergentism, which depends on the following three theses. The first, which is common to the strong forms, is that emergent properties are systemic properties. "A property is a systemic property if and only if a system possess it," asserts Stephan, "but no part of the system possesses it" (1999, p. 50). Also, in agreement with the irreducible strong forms, the weak form denies a strong sense of reductionism. The next two theses of the weak form, however, are distinct from the strong forms. The thesis of physical monism claims that all systems are composed of material parts, while the thesis of synchronic determination claims that systemic property depends on the system's structure or arrangements of the parts. The weak form then is compatible with property reductionism because certain emergent or systemic properties of the system do depend on the system's structure.

Finally, a controversial issue among proponents of emergentism is the possible interaction between emergent higher order properties and lower order properties, especially in terms of supervenience and causation. Supervenience refers to the relationship between families of properties, in which a family of properties P depends upon another family of properties N and in which P is not reducible to N (Kim, 1984). Given these conditions, P supervenes on N; and, for any two entities that share N they must also share P. The converse does not hold, however, so that for two entities that share P they need not share N. For example, if the psychological properties supervene on neurological properties then the neurological properties vary if the psychological properties do but the psychological properties need not vary if the neurological properties do. Some philosophers hold that there can be interaction between them, with the higher order properties supervening on the lower order properties in a causal manner. Other philosophers claim that the higher order properties supervene on the lower order properties without any direct causal interaction between them.

1.3 Ontological Commitments

A worldview, in terms of metaphysics, is also composed of our deepest ontological commitments about what the world is and what the world contains. Ontology, as it developed in western philosophy, is concerned with what makes up the world in a fundamental way. It provides a general framework by which to categorize the entities that make up the world. Different ontologies have different categories (Pojman, 1998). For example, one ontological system divides the world into the universal and the particular, while another into the abstract and the concrete. Although there is some similarity between the universal and the abstract and between the particular and the concrete, there is none between the universal and the concrete or between the abstract and the particular. Moreover, universals can be subdivided into properties, kinds, and relations, while the concrete can be divided into substances and non-substances.

Ontological commitments refer the nature of the entities, which a worldview presumes to exist in the world. Thus, various worldviews are committed to different ontologies. For example, it is consistent for a worldview that takes a stance of mechanistic monism and that presupposes reductionism to be committed ontologically to physicalism or materialism. Such a worldview could not be easily committed to organicism. On the other hand, it is consistent for a worldview that takes a dualistic or holistic stance and that presupposes emergentism to be committed to organicism. However, such a worldview could be committed to a non-reductive physicalism or materialism. The ontological commitment of the biomedical model is physicalism or its older manifestation of materialism, while humanistic or humane medicine is generally committed ontologically to organicism.

1.3.1 Physicalism/Materialism

Physicalism, as William Seager so succinctly puts it, is “the claim that everything is physical” (2000, p. 340). In other words, the world and everything in it is corporal or physical in nature and there is nothing in it that is not physical. For example, Thomas Nagel defines physicalism as “the thesis that a person, with all his psychological attributes, is nothing over and above his body, with all its physical attributes” (1965, p. 339). Indeed philosophers use physicalism to examine the relationship between the mind and the body, in which mind states are often equated with brain states—known as the identify theory (Pojman, 1998).[18] The problem with this notion of physicalism is its naiveté, in that experience reveals greater complexity than simply the physical. However, the notion is not as simple as it appears but comes in a variety of forms based on one’s assumptions.

A more prevalent definition of physicalism, which avoids the problems associated with its naive form, is in terms of the physical sciences.[19] For example, as Tim Crane and David Mellor note, physicalism is traditionally defined as “all entities

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[18] The notion of materialism has also been used to discuss the mind-body problem (Smart, 1963a).

[19] J.J. Smart also defined materialism in terms of physics: “By ‘materialism’ I mean the theory that there is nothing in the world over and above those entities which are postulated by physics” (1963a, p. 651). He specifically denied earlier “billiard-ball” physics, opting for contemporary physics in which matter and energy are interrelated. For Smart, as well as for other modern materialists, the ultimate entities of the world are “space-time points.”

and, properties, relations, and facts…which are studied by physics or other physical sciences" (1990, p. 394). Engel also claims that physicalism "assumes that the language of chemistry and physics will ultimately suffice to explain biological phenomena" (1977, p. 130). And for Hellman and Thompson (1975) mathematical physics best exemplifies the most "basic" physical science. By defining physicalism thusly, it is grounded in both rationalism and empiricism that confers a sense of authority to physicalism enjoyed by the natural sciences.

1.3.2 Organicism

Most humane or humanistic models of medical knowledge and practice recognize and appreciate the value of the biomedical model's reductive materialism, especially in terms of the technical advances for medical practice; however, this presupposition is strongly tempered and, in some cases even rejected, in these models. Often humanistic models temper or reject reductionism by including a patient's integrative system as an etiological factor in diagnosis of illness and as a therapeutic factor in recovery. By incorporating a system dimension of the patient, humane models of medicine are grounded by an ontological commitment to organicism.

Organicism is a notion that entails organic unity, especially in terms of the organismal unit. It emphasizes structure or organization in contrast to composition. In this sense, it is not necessarily dependent on physicalism or materialism, since emergent properties need not be reduced to material or physical components. In other words, the emergent property need not be physical or material. Moreover, a reductionistic materialist perceives entities from the bottom up while an emergenistic organicist perceives them from the top down.[20]

Importantly, the rejection of physicalism or materialism does not mean that organicists embrace vitalism, especially the variety that envisions an *élan vital* or an entelechy as an emergent property. The nature of life, in non-reduced organicist terms, is not simply the summation of its material or vitalist components. Rather, it reflects the assemblage of its parts as a whole, especially with respect to its informational content (Foss, 2002). Consequently, properties emerge that cannot be derived or deduced from examining the individual parts in isolation; rather, only when the whole is examined can the emergent properties be explained.

Organicism, then, differs from reductionistic materialism and vitalism in terms of focusing on the inter-relationships of parts as a complex matrix, rather than a simple combination or collection of parts. No additional element is necessary to account for the whole as required for vitalist positions and the whole cannot be

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[20] Along with a notion of emergentism, von Bertalanffy (1968) also developed a notion of organicism. His notion is based on a dynamic whole that is composed of interrelated and regulated parts. Central to his notion of organicism are level specific laws that govern the activities at a higher level.

explained in terms of a simple analysis of the component parts in isolation, as sufficient for reductionistic materialism.

1.4 Summary

The worldviews in which the biomedical and humanistic models are situated exhibit very different metaphysical boundaries in terms of their metaphysical positions and presuppositions and ontological commitments (Table 1.1). Whereas the biomedical model is bounded by a metaphysical position of mechanistic monism and a metaphysical presupposition of reductionism, and an ontological commitment to physicalism or materialism, the humane models are bounded by a metaphysical position of dualism or holism and a metaphysical presupposition of emergentism, and an ontological commitment to organicism. Thus, there seems to be a major shift underway in the metaphysical boundaries for contemporary medicine. Part of the impetus for this shift is certainly the quality-of-care crisis. Many physicians, and patients too, realize that the biomedical model succeeds in delivering excellent technical cures for many diseases; but, it fails to deliver the quality of care that addresses the suffering a patient experiences from being ill.

Importantly, shifts in metaphysical positions and presuppositions, as well as in ontological commitments, are not uncommon in the history of the natural sciences. For example, Collingwood documented a shift in presuppositions from the Newtonian mechanistic universe to the Einsteinian relativistic universe. E.A. Burtt (1892–1989), in *The Metaphysical Foundations of Modern Physical Science* (1932), also mapped the changes in presuppositions from Copernicus and Kepler to Newton to frame physical conceptions of the universe. Burtt's thesis was that contemporary philosophical issues, particularly those associated with the displacement of humans from the physical and metaphysical center of the cosmos, reflect philosophers' uncritical acceptance of the shift from a medieval worldview to a Newtonian or modern scientific worldview. That shift is particularly evident in the metaphysical categories used to frame the modern perception of cosmology; specifically, the modern categories of space, time, and mass replaced the medieval categories of substance, essence, and form. Moreover, modern reality became atoms and their motions, efficient causality, and the identification of mind with the brain. Burtt's demonstration of the importance of metaphysical presuppositions in the development of scientific knowledge ran counter to the then prevalent logical positivist's view that metaphysics is superfluous for the natural sciences.

Finally, Thomas Kuhn (1922–1996) in *The Structures of Scientific Revolutions* (1996) located shifts in metaphysics to scientific revolutions, as part of the "disciplinary matrix" that makes up scientific practice under a given paradigm; for the community's "collective metaphysics" is an important part of this matrix. As a scientific community makes a transition from an old paradigm to a new one, the community revisits and reevaluates its metaphysical foundations. Debates over those foundations for the reigning and competing paradigms are intense and reflect the incommensurable foundations that under gird the two paradigms. Moreover, the debates also reflect the inability of the empirical data to resolve the competition between two incommensurable paradigms. Although the empirical data are necessary for the eventual resolution of a controversy, they are not sufficient. The metaphysical foundation of the particular worldview must first be in place before a paradigm shift can occur.

Models, according to Kuhn, are also part of the metaphysical component of scientific practice. This dimension includes beliefs, such as in models as heuristic devices for guiding research or as ontological formulae for carving up the world. Models within a metaphysical context also provide the community with permissible metaphors. "By doing so," argued Kuhn, "they help to determine what will be accepted as an explanation and as a puzzle-solution; conversely, they assist in the determination of the roster of unsolved puzzles and in the evaluation of the importance of each" (1996, p. 184).

The question that obviously surfaces is whether the introduction of humanistic or humane medical models *vis-à-vis* the biomedical model represents a paradigm shift. In other words, are the two models incommensurable? In a sense, the metaphors upon which the biomedical and humanistic models are based are incommensurable. While the biomedical model has a worldview based on a bottom-up approach to the world, the humane models are based on a top-down approach and there appears to be no intersection between them. This lack of apparent intersection is evident from an analysis of the various components that compose the two models, including the notions of the patient, disease, health, etc. However, this analysis also reveals that the lack of intersection is not global but often simply local. For some humanistic proponents, the humane models supervene on the biomedical model.

Chapter 2
Medical Causation and Realism

Causation and realism are two important notions that are essential for understanding any worldview, especially medical worldviews. The notion of causation refers to the act of bringing about or producing an effect (Horner and Westacott, 2000). In other words, causes are responsible for the fabrication or creation of events and entities within a given world. Causation is based on the principle that natural phenomena may have sources other than themselves, i.e. they need not be necessarily self-originating or self-generating. The notion of causation has had a tumultuous history in philosophical thought, especially with Hume's accusation that there is no necessary connection between cause and effect. Be that as it may, causation still plays an important role in almost any medical worldview with respect to knowledge and practice. Physicians and patients are both interested in the causes of diseases and poor health, as well as good health and wellbeing. Identifying a disease's cause is the first step often towards the possibility of treating a patient's diseased state or illness.

Realism, as a metaphysical notion, has also been vigorously contested during the history of western philosophy (Horner and Westacott, 2000). Today it pertains to the belief that there are real objects, especially at the level of the unobservable, which exist independent of the mind. In other words, reality is not reducible to a universal mind. Contemporary realism is a reaction to Kant's transcendental idealism, which claims that we cannot know reality in and of itself apart from our cognitive capacities, and to Hegel's absolute idealism, which asserts that mind is the supreme source for all knowledge and understanding. Although there are a variety of realistic positions, they are broadly divided into direct and indirect realism.[1] The different forms of realism share a fundamental belief in the existence of objects that exhibit mind-independent properties or qualities.

Antirealist positions deny one or both of these two fundamental features of realism: existence and/or mind-independence. Two important antitheses to contemporary realism are instrumentalism and constructivism. The former claims that reality is limited to entities observable to the unaided senses and that theories about unobservable

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[1] Susan Haack (1987), for example, identifies nine different versions of realism.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

entities are simply predictive or useful tools, while the latter claims that reality is simply a social construction based on a professional community's consensus of what constitutes reality. Like causation, realism also plays an important role in contemporary worldviews of medicine. Just as physicians and patients are interested in the cause of disease, so they are also interested in the actual or ontological status of disease and of the entities that cause them. A patient wants to know if he or she is really sick, as does the physician. In other words, can the disease-causing entity be identified and eradicated? In this chapter, the notion of causation is examined first, followed by the notion of realism.

2.1 Causation

Any discussion of causation in the western tradition must begin with the Greeks. In *Metaphysics*, for example, Aristotle (2001) distinguished four causes responsible for natural phenomena: material, formal, efficient or artificer, and final or teleological. His list represents a culmination of the pre-Socratics' and Plato's discussion of causation. The material cause involves the substance or matter out of which an object is made, while the formal cause pertains to the plan or design by which it is made. The efficient or artificer cause represents the agency or primary source responsible for making the object, while the final or teleological cause is the purpose or function for which it is made. For example, a table may be made out of wood by a carpenter. It may have a design of a flat square surface from which four legs are attached at each corner perpendicular to the plane's surface and is used to eat meals or to play cards. Francis Bacon (1561–1626) trimmed Aristotle's four causes to two, material and efficient, at the beginning of the scientific revolution in the sixteenth century (Bacon, 1994). By the seventeenth century moral philosophers debated issues concerning efficient causation, while natural philosophers were interested in material or mechanistic causation (Crane and Farkas, 2004).

Besides the trimming of the Aristotelian causes, the notion of causation became a contested issue in philosophy beginning with the seventeenth century. David Hume (1975) was responsible for initiating the debate over the notion among moral philosophers. Although Hume recognized that causation is "the cement of the universe," he claimed that there is no "necessary connection" between two events in terms of cause and effect. Rather, there is simply a "constant conjunction" between two events such that we impose a causal connection, with one being the cause and the other the effect. Thus, causation reflects cultural or social indoctrination. Immanuel Kant (1998) responded to Hume by situating causation as one of the principal categories responsible for "pure" understanding, especially natural or scientific understanding. For Kant, this category ensures the validity of scientific laws, in that human understanding imposes a causal relationship on scientific evidence in which phenomenal events are associated.

2.1.1 Contemporary Causation

Contemporary philosophers continue to debate the nature of efficient causation with no clear resolution in sight. They address two major questions with respect to efficient causation (Crane and Farkas, 2004). The first involves the type of entities that serve as causes and effects. For example, Donald Davidson (2004) claims that these entities are events that unfold or happen over time. "Much of what philosophers have said of causes and causal relations," argues Davidson, "is intelligible only on the assumption (often enough explicit) that causes are individual events, and causal relations hold between events" (2004, p. 410). However, David Mellor (2004) proposes a more expansive explication of causation and claims that causal entities are facts, which represent actual states of affairs, or particulars, which represent things or events.

The second question concerning causation involves the types of relationships between causes and effects. Contemporary philosophers discuss the nature of these causal relationships in terms of natural laws, as well as in terms of singular and probabilistic causation (Sosa and Tooley, 1993). Finally, the relationships between causes and effects are also discussed in terms of sufficient and necessary conditions, i.e. a cause may be adequate or required for an effect to occur (Humphreys, 2000).

Mellor (2004) identified four important "connotations" or criteria of causation, including temporality, contiguity, evidential, and explanatory. The temporal connotation or criterion involves the notion that causes generally precede the effects they evoke. The contiguous criterion includes the connection of the causes with the effects. The evidential connation pertains to the confirmatory support of the causes and the effects for each other. Finally, the explanatory criterion attests to the fact that causes serve to account for effects.

For Mellor, then, theories of causation must address both the temporal and spatial issues as to why causes must proceed and be contiguous with their effects. Also, such theories must "combine with our theories of evidence and explanation to say what makes causes and effects evidence for each other and how causes explain their effects" (Mellor, 2004, p. 424). Only by this means can a theory of causation be robust enough to account for causal relationships.

The nature of causation is also important to philosophers of the natural sciences, especially in terms of the discovery of causal relationships or connections among natural phenomena; for it is imperative that scientists distinguish between those entities that cause natural phenomena and those that do not (Humphreys, 2000). For philosophers of science, especially those advocating a "new experimentalism," controlled experiments represent a valid means of discovering causal relationships (Ackermann, 1989). By restricting independent variables, an investigator can determine not only the causal status of a dependent variable in terms of a natural phenomenon under investigation but can also determine the nature of the relationship between the cause and effect, i.e. whether it is linear or geometrical. But even this approach to efficient causation remains problematic for many contemporary philosophers.

Practicing scientists, however, do not concern themselves directly with the issue of efficient causation but rather with material causation, especially in terms of natural phenomena, which they take to be unproblematic. For example, Kenneth Rothman provides a typical definition for causation from a biomedical perspective: "A *cause* is an act or a state of nature which initiates or permits, alone or in conjunction with other causes, a sequence of events resulting in an *effect*" (1976, p. 588). Causation, in the natural sciences, is concerned with identifying the natural or physical acts or states that produce an effect. Moreover, a cause may be either sufficient or necessary. A sufficient cause is capable of eliciting the effect, while a necessary cause is required for educing it.

2.1.2 Medical Causation

Although a few diseases may be the result of a single sufficient and necessary cause, the majority of diseases are generally not the result of any single cause but rather of multiple causes (Rizzi and Pedersen, 1992). As Rothman states: "Most causes that are of interest in the health field are components of sufficient causes, but are not sufficient in themselves" (1976, p. 588). In other words, there is a constellation of causes that is responsible for a disease.

The causal relationship is not generally a simple linear relationship between cause and effect. That relationship is often complex and multifaceted (Montgomery, 2006). Sufficiency and even necessity in terms of disease causation are generally only partial. In other words, "we never have a *full* causal network or tree, but only a partial one" (Rizzi and Pedersen, 1992, p. 240). Many causes, whether sufficient or necessary, can be assigned a percentage in terms of their "etiologic fraction" for causing a disease. Thus, biomedical causation is seldom strictly deterministic but rather it is often probabilistic (Giere et al., 2006).

Causation within the biomedical model is generally attributed to physicochemical mechanisms.[2] As noted earlier, mechanisms are composed of entities and forces that involve changes in the entities over time. As such, a mechanism is made up of entities and forces that interact with one another. Employing Machamer and colleagues representation of a mechanism, A→B→C, in which the letters represent entities and the arrows represent activities that provide the continuity in change or process of the mechanism from start to finish, a mechanism is a linear unfolding of one event after another. In this schema, the preceding letter, A, is often considered the cause of the proceeding letter, B, which is considered the result, with the arrow indicating the change or transition that takes place in the causal relationship or

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[2] Whitbeck proposes two criteria for determining whether an "etiological agent" is the cause of a disease: "first, a preference for a proximate as opposed to a remote cause, and second, a preference for a factor which exists in the environment prior to contact with the patient's body and which may then act upon it" (1977, p. 631).

transformation. Moreover, mechanisms may be much more complicated with branching structures and feed-back and feed-forward loops. For example, the production of C may either amplify (feed-forward) or inhibit (feed-back) the production of B through A.

Finally, Rizzi and Pedersen (1992) proposed a useful taxonomy of causal factors in disease etiology, especially for diseases with multifactorial causes. The first category is the avoidable cause. In a causal nexus there are a variety of causal factors that are operative, which could be avoided or compensated for. They provided an example of a patient who after contracting mononucleosis, with an associated enlarged spleen, is counseled not to engage in strenuous physical activity but fails to heed the counsel and consequently suffers a ruptured spleen. Often many of these avoidable causes are the result of human error, whether in terms of skill or knowledge.

The second category is the impervious cause (Rizzi and Pedersen, 1992). This type of cause is unavoidable and usually the result of a pathophysiological process. With the above example, the enlarged spleen associated with mononucleosis is often unavoidable with respect to current medical practice. The final category is the susceptible cause. This type of cause includes examples of "potential and actual candidates for achievable therapeutic or prophylactic measures, factors that can be prevented or obliterated by intervention, factors that impede, impair or jeopardize the patient and are the declared objective of medical practice" (Rizzi and Pedersen, 1992, p. 252). In terms of treatment, for example, bed rest is a cause for recovery from mononucleosis. These categories of causes help, according to Rizzi and Pedersen, the biomedical practitioner to analyze the interactions involved in multifactorial disease causation.

2.1.2.1 Henle-Koch Postulates

A classical example of biomedical causation in terms of mechanism is infectious disease. In the late nineteenth century, Jacob Henle (1809–1885) provided postulates, which were later modified by his pupil Robert Koch (1843–1910), needed to establish that a microorganism or parasite causes a particular disease (Evans, 1976). These postulates include: (1) the microorganism or parasite is present in every case of the disease; (2) it must be isolated from the host and grown under *in vitro* conditions; and (3) after being isolated and grown under *in vitro* conditions it must then be shown to produce or cause the disease by direct exposure to a healthful organism. In terms of a mechanism then, the causal relationship can be schematized as follows: A→B, where A is the microorganism that is responsible for B, the disease state, while the arrow represents the transition of the organism from a state of health to one of disease through the pathological agency of the microorganism.[3]

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[3] The Henle-Koch postulates satisfy Mellor's criteria for causation: the temporal and evidential criteria are satisfied by the third postulate, the contiguity criterion is satisfied with the first postulate, and the explanatory criterion is satisfied with the second and third postulates.

However, the above causal relationship is never quite as straightforward or simple, on first pass. According to Alfred Evans, “even at the time they were presented, the Henle-Koch postulates were never recommended as rigid criteria of causation and failed to apply to many diseases at the time when a causal relationship seemed almost unequivocal” (1976, p. 177). For example, a debate arose several decades ago over the application of these postulates to establish the causal agent for acquired immune deficiency syndrome or AIDS (Fujimura and Chou, 1994). Peter Duesberg (1988, 1997) claimed that the evidence for establishing human immunodeficiency virus or HIV as the causative agent of AIDS does not satisfy or fulfill the Henle-Koch postulates. Other researchers, however, argued that HIV does cause AIDS and that the evidence for it as the causative agent of AIDS does satisfy or fulfill the postulates (Cohen, 1994; O’Brien and Guider 1996).

2.1.2.2 Hill’s Criteria

Another problematic area of biomedical science in terms of establishing causation is epidemiology. For example, although cigarette smoking is considered a cause of lung cancer based on epidemiological evidence it is neither sufficient, in that not all smokers contract lung cancer, nor necessary, in that non-smokers contract the disease. Austin Hill (1965) proposed nine “aspects” or “viewpoints”—as he called them—or criteria—as they are called in the literature—for whether an association between two events is causative, based on epidemiological evidence. The first criterion is the strength of the association, i.e. the rate of increase in the appearance of the disease in the experimental group compared to the control group. The next criterion is the consistency of the association and involves the repeated observation of the disease by multiple investigators at different times and locations using different methodologies. The third criterion is the specificity of the association, i.e. the agent gives rise to a specific disease only and not to multiple diseases.

Hill’s fourth criterion is the correct temporal relationship of events in the association between the agent and the appearance of the disease, i.e. the causative agent must precede temporally the appearance of the disease. The next criterion involves a biological gradient or dose-response relationship for the association between the agent and appearance of the disease. The sixth criterion is the biological plausibility of the association, especially in terms of current theory concerning the disease’s mechanism. The next criterion is the coherence of the association with other known biological facts in the history of the disease. The eighth criterion is the availability of supporting experimental evidence, especially production of the disease in an animal model. The final criterion is the appeal to an analogous situation in which a causal relationship is previously established for the disease or a similar disease.[4]

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[4] Hill’s criteria for causation in epidemiology also satisfies Mellor’s criteria for causation: the temporal criterion is satisfied by Hill’s fourth criterion, the contiguity criterion is satisfied by Hill’s second criterion, the evidential criterion is satisfied by Hill’s first, third, fifth, and eighth criteria, and the explanatory criterion is satisfied by Hill’s sixth, seventh, and ninth criteria.

The above "aspects" or "viewpoints" are standard criteria, although Hill cautioned against this term, to establish causation for many chronic diseases that have multiple causative factors or agents. For example, in the 2004 Surgeon General Report, *Health and Smoking*, the above "criteria" are used to judge that the association between cigarette smoking and lung cancer is causal (Carmona, 2004, p. 24). Consistency, for instance, pertains to a large number of retrospective and prospective studies that constantly demonstrate a link between smoking and lung cancer, while the biological gradient, for instance, involves a positive dose-response curve between the number of cigarettes smoked and the incidence of lung cancer in those who smoke cigarettes. Although the report acknowledges that judgments concerning causality under such circumstances are "always uncertain to a degree," still such judgments can be made "based on the totality of scientific evidence."[5]

2.1.2.3 Evolutionary Causation

Nesse and Williams have recently championed a notion of evolutionary causation for disease, which answers the question of "why" concerning disease origins. Evolutionary causes are used to demonstrate "why humans, in general, are susceptible to some disease and not to others" (Nesse and Williams, 1996, p. 6). They contrast their notion to the notion of proximate causation, which answers the questions of "what?" and "how?" concerning disease origins. There are six categories of evolutionary causation, including defenses, infections, novel environments, genes, design compromises, and evolutionary legacies. These categories often intersect in terms of disease causation: "Novel environments often interact with previously invisible genetic quirks to cause more variation in phenotypes, some of it outside the normal range" (Nesse and Williams, 1996, p. 144). For example, a disease such as scurvy is a civilization disease in which vitamin C is absent from a modern diet.

According to Mel Greaves (2002), evolutionary causation of diseases revolves around the fact that genes that were at one time beneficial in terms of adaptation to the environment are no longer so because of changes in the environment. This is particularly true for cancer causation. Although the molecular and genetic components of cancer causation are important, they represent the proximate causal components; a fuller causal accounting requires historical and evolutionary components. "A key part of this argument," claims Greaves, "rests on the premise that certain normal (non-mutant) genes and gene variants or alleles selected in the past because they encoded functions that endowed survival or reproductive advantage now have the potential indirectly to increase cancer risk because of a change in the physiological context in which these same genes are now required to operate" (2002, p. 246). For example, breast cancer incidence is higher in western society, especially among Roman Catholic nuns, because exposure to estrogen is not broken by multiple pregnancies.[6]

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[5] The validity of these "criteria," especially for establishing a causal relationship between cigarette smoking and lung cancer, has been contested (Burch, 1983).

[6] Evolutionary causation also fulfills Mellor's criteria for causation.

2.1.2.4 Humanistic Concerns

Although determining a distinct cause or causes of a disease is central for biomedical practitioners, humanistic or humane practitioners are less sanguine about it. For example, Cassell argues that the attempt to find a unique, mechanistic cause for a disease is ill founded or wrong headed: “although the desire to find a unique cause is natural, it stems from an incomplete view of how illness occurs” (1991, p. 109). Rather, illness results from a disruption in a living system. Cassell invokes insights gleaned from general systems theory to contend that efforts to determine a specific cause for an illness are ineffectual: “The contribution of general systems theory has been important in the growing understanding that illness cannot be viewed from the perspective of disease alone” (1991, p. 111). Illness is simply more than a disruption in the patient’s physiology; rather, it also includes the psychological and social. He illustrates this point with an elderly man who is brought to the hospital with pneumonia. Recently widowed and suffering from a dysfunctional knee, he is unable to obtain the necessary nourishment and succumbs to the bacterium. The issue here is that the cause of this person’s illness is multifactorial with no single cause predominating.

Stephen Toulmin also advocates an expanded notion of causation in medicine, to include not just the somatic but also the psychological and the social: “Philosophically speaking, there is no particular reason to select somatic factors as any more immediately relevant to or causative of human illnesses than all other kinds of factors and conditions involved” (1979, p. 68). For example, he cites the futility of treating a business person’s ulcer through somatic intervention but ignoring the stress that comes along with the person’s job. He then challenges physicians to include in their causative notion of illness the social issues that are responsible for illness: “if they are to develop a broader view of medical causation, they must also widen their ideas about the legitimate loci and modes of intervention, and so about their professional responsibilities: they may accept happily, for instance, the need to counsel their patients about their employment, styles of life, personal temperaments, and so on” (Toulmin, 1979, p. 68). Only then, can modern medicine overcome its myopic view of disease causation to address the suffering patient’s experience of illness.

2.2 Realism and Antirealism

Just as the Greeks can be utilized to initiate a discussion on causation, so they can be used to begin one on the notion of realism (Horner and Westacott, 2000). Realism has its roots in the debate between Aristotle, who believed that investigations into the world reveal how the world really is independent of us, and Plato (427–347 BC), who believed that such investigations could not reveal the world as it is independent of us but only a copy of it. During the Medieval Ages, the debate centered on the distinction between realism, which involves mind-independent universals and their primary properties, and nominalism, which involves mind-dependent universals that exist in name only.

During the Enlightenment, however, realism was contrasted with idealism, the notion that there are only ideas formulated in the mind (Horner and Westacott, 2000). For idealists, such as George Berkeley (1685–1753), physical objects are simply a collection of sense perceptions and do not exist apart from those perceptions. Kant held that there is indeed a mind-independent world that can be known empirically (empirical realism) but that it is dependent on our way of knowing (transcendental idealism).[7]

Today, especially after logical positivism, realism is the philosophical notion that real entities exist independent of us and our perceptions of them. In other words, reality depends on the direct correspondence of facts with the way the world is. The notion of antirealism denies that there is a world independent of us and our perceptions of it or that there is a direct correspondence between facts and the way the world is.[8]

The two contemporary champions of these positions are Hilary Putnam (1977, 1990) and Michael Dummett (1978, 1991). Although Putnam began as a realist, he changed his mind and now advocates a notion of "internal realism," in which the real is bounded by a theoretical framework. Reality then is dependent upon such a framework, especially with respect to linguistic terms, and all talk outside this framework is suspect.[9] In contrast to Putnam, Dummett argues that realism is the position in which a statement's meaning is understood in terms of those conditions in which that meaning is true or real. Antirealism, the position he advocates, holds that a statement's meaning is understood in terms of the conditions that would simply warrant its assertion—nothing more.

Besides Putnam's internal realism and Dummett's antirealism, there are a variety of other realist and antirealist positions that play a significant role not only in philosophy but in other disciplines as well. The debate is important in the fine arts, for instance, with a variety of realist and antirealist positions. Realism, especially its absolute version, is rejected because criteria for determining representation are relative to cultural values. Recently, Dominic Lopes (1995) has proposed a pictorial realism that takes into consideration this cultural relativity. For Lopes, realism depends on the cultural system and its commitments to what needs to be communicated in terms of appropriate information: "We may say that systems are 'appropriately informative' to the extent that they make commitments of the sort, which satisfy requirements as to the kind of information pictures should convey for the purposes they serve in given contexts" (1995, p. 283). For example, impressionist pictures are

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[7] Realism is both a metaphysical notion, in that a mind-independent world exists, and an epistemological notion, in that knowledge of the mind-independent world is obtainable.

[8] For realists, then, facts are unproblematic and represent the world's ontology. For antirealists, however, facts are problematic in that they represent not the world's ontology but interpreted data.

[9] Curtis Brown (1988) explores the similarities between Putnam's internal realism and Kant's transcendental idealism.

realistic to viewers who hold a specific perspective to what sorts of information a picture should represent.[10] Although the above forms of the realism/antirealism debate are interesting and instructive, the following discussion is limited to the positions of direct, representative, critical, and scientific realism and to the antirealist positions of instrumentalism and constructivism, after which I discuss realist and antirealist positions in medicine.

2.2.1 Realism

2.2.1.1 Direct or Naïve Realism

Direct or naïve realism is motivated by common sense, in that when an object is perceived within a definite location there is no need, most of the time, to justify its existence. Proponents of this position state "that our claims about the world are made true or false simply by the way the world is, independently of our cognition of it" (Horner and Westacott, 2000, p. 37). In other words, our senses provide us direct access to or immediate contact with the world. A major appeal of direct realism is that "it denies a foothold to sceptical doubts about the match between our subjective experiences and objective reality" (Horner and Westacott, 2000, p. 37). However, this appeal is not completely warranted or unproblematic.

Although direct realism appeals to a common sense that appears immune to skepticism, uncritical or naïve common sense is often deceived. For example, common sense held for centuries that the earth is flat. Moreover, Descartes claimed that although he sees a hooded figure crossing the street he does not know if it is a person or a robot. Consequently, perceptions are subjective and depend on additional evidence to confirm their veracity. Direct realism fails because ultimately there is no immediate access to objects; rather, that access is mediated or determined temporally and spatially by the senses.

2.2.1.2 Representative or Representational Realism

Representative or representational realism takes into consideration the mediation of sense perception when examining reality. Its contemporary roots are in the seventeenth century, in which Descartes and John Locke (1632–1704) distinguished between an object's primary and secondary qualities. The primary qualities are those that really do belong to the object itself, while the secondary qualities are not

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[10] Lopes' notion of pictorial realism has important implications for medicine, especially in terms of art therapy. For example, pictures drawn by children with cancer can convey important information about the child's experience of cancer.

the object's intrinsic properties. Examples of primary qualities include motion, quantity, shape, and extension in space, while examples of secondary qualities include color, taste, and smell.

Representative realism is the position that "our sense-perceptions are caused by independently existing physical entities possessed of physical properties describable in a language of mathematical physics, and that these properties can be inferred from our sense-impressions" (Horner and Westacott, 2000, p. 42). This realistic position differs from naïve realism by holding that our sense perceptions do not give us direct access to the way the world is but are derived or inferred from those perceptions. However, it also differs from idealism in that our knowledge of the world is not simply a mental construct apart from the object.

Although representative realism seems plausible enough, a problem arises as to whether sense perception, even of an object's primary qualities, permits an inference of its existence; hence, as for direct or naïve realism errors and illusions remain a problem for this type of realism. Specifically, there is no sense-independent means to justify an object's existence. This is no easy problem to resolve, if it can be resolved at all.

2.2.1.3 Critical Realism

Critical realism, a successor to representative realism, is an attempt to resolve its predecessor's problem of errors and illusions. Unfortunately it has many versions, especially in the United States and the United Kingdom, although it is most commonly associated today with Roy Bhaskar.[11] Fundamentally, proponents of critical realism propose that mental or cognitive activity plays a mediating role in understanding the world. "One could fashion an account of mental mediation that did not involve the pitfalls of Lockean representationalism," notes C.F. Delaney, "by carefully distinguishing between the object known and the mental state through which it is known" (1999, p. 194).

Roy Sellars, who coined the term in 1916, claimed that the central tenet of critical realism is: "knowledge of external things and of past events is an interpretation of these objects in terms of understood predicates and does not involve the literal presence of these objects in the field of consciousness of the knower" (1927, p. 238). In other words, objects do exist apart from their perceptions but, at the same time, are contingent upon personal and cultural factors.

Critical realism is a philosophical view that asserts a mind-independent world, but a world that changes as our knowledge of it develops—what Sellars called "a

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[11] Bhaskar (1997, 1998) proposed a version of critical realism that incorporates current developments in the psychological and natural sciences. Bhaskar's version of critical realism is divided into "Transcendental Realism" and "Critical Naturalism." Transcendental realism refers to ongoing processes by which scientists investigate the natural world, while critical naturalism refers to the distinction between the social and natural worlds in that rapid changes in the social world may result from human agency.

reinterpretation of the nature of knowledge" (1927, p. 238). Consequently, error and illusion can be explained in terms of development or reinterpretation. For Sellars and a few other critical realists mental mediation is material in nature, while for others it is not. Although critical realism helps to defend realism, its account of the mental *vis-à-vis* psychological sciences is problematic since science itself is often undergoing revision.

2.2.1.4 Scientific Realism

Scientific realism, which developed in response to logical positivism's branding of the realism question as metaphysical and therefore a pseudo-question, is the position that "science provides us with a true picture of independently existing reality" (Horner and Westacott, 2000, p. 112). Scientific realism and its antithesis, antirealism, have recently dominated much of the discussion in contemporary science studies, especially in terms of the antirealist positions of instrumentalism and constructivism (Devitt, 2005).[12]

Richard Boyd (1991) has identified four key features of scientific realism, based on the notion that science's technological or instrumental success depends upon theories in which the terms refer approximately to the real nature of the world. The first is that the theoretical or unobservable terms of a scientific theory represent actual entities. In other words, these terms should be interpreted in a realistic manner. The next feature is that scientific theories can be and often are confirmed by experimental procedures and other observational means. Although the confirmation is not absolute, it is approximate or probable. This leads to the third feature. As evident from the history of science, a mature science's progress may be interpreted as asymptotic, i.e. coming closer and closer to the way the world really is. In fact, theories build upon one another in a march towards unpacking reality in terms of scientific investigations. The final feature is that the "reality which scientific theories describe is largely independent of our thoughts or theoretical commitments" (Boyd, 1991, p. 195).

A traditional defense of scientific realism is the "no miracle" argument (Smart, 1963b). "According to this argument, it would be an extraordinary coincidence if a theory that talks about electrons and atoms made accurate predictions about the observable world—unless electrons and atoms actually exist" (Okasha, 2002, p. 63). In other words, realists claim that antirealists must invoke the miraculous to

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[12] Besides these two antirealist positions, phenomenalism and empiricism also represent important antirealist positions. For example, Bas van Fraassen (1980) proposed a "constructive" empiricism in which empirical adequacy, and not literal truth, is the basis for commitment to a scientific theory. And, Arthur Fine (1996) proposed an alternative to scientific realism he called the "natural ontological attitude," which is a minimalist position concerning the claims of science. Whereas scientific realists accept theoretical claims as true and their entities as real, Fine simply accepted scientific theories and their entities without evaluative judgment. He claimed that this position is not antirealism but nonrealism.

account for the theoretical and technological success of science. Antirealists, however, claim that the "no miracle" argument is also supportive of their position. They argue that an equally valid—and probably a more parsimonious—interpretation of the success of science, than the truth of theories and their entities, is that science is simply on the right path for empirical success.[13]

Besides the objection to the "no miracle" argument, antirealists object to scientific realism on two other fronts. The first is that many past scientific theories and their entities are no longer accepted by the contemporary scientific community. This objection is called "pessimistic induction" and relies on the historical record, which is replete with case studies demonstrating the fallibility of scientific theories and the fictional nature of theoretical entities. For example, Larry Laudan (1981) lists dozens of theories that were at one time accepted by the scientific community only to be refuted through later development, with the classic example being phlogiston. Realists accept that the historical record demonstrates that many scientific theories are eventually proved wrong; but they still claim overall that scientific theories that replace the wrong ones more closely approach reality.

Antirealists level another objection against scientific realism—the underdetermination thesis, which asserts that empirical evidence is unable (in principle) to justify a theory *vis-à-vis* competing theories. Antirealists claim that if evidence cannot justify any one theory, then it is questionable whether one can accept the existence of theoretical entities or the truth of scientific theories. Realists counter by stressing that the underdetermination thesis also applies to observable entities and the criticism is thereby arbitrary.

There are several types of scientific realism, often proposed in response to antirealist criticism, depending on whether the emphasis is on the metaphysical (existence) dimension of the world or on its epistemological (truth content) dimension (Devitt, 2005). A popular form of scientific realism is "entity" realism, especially championed by Ian Hacking. "*Scientific realism*," according to Hacking, "says that the entities, states, and processes described by correct theories really do exist" (1983, p. 21). In other words, the entities proposed in scientific theories, like atoms, molecules, and genes, are real, especially if these entities can be manipulated experimentally. In a well known passage on altering the charge of a niobium ball by spraying it with either positrons or electrons, Hacking asserts: "*So far as I am concerned, if you can spray them then they are real*" (1983, p. 23). Antirealists argue that this form of realism relies on the precarious nature of unobservable entities and claim that there is a divide between the observable and the unobservable. Antirealists distrust the unaided senses for populating the world with unobservable entities.

For scientific realists theoretical entities, although unobservable to the unaided senses, are as real as observable entities such as organisms and planetary bodies. Realists claim that the goal of science is to provide an understanding of nature in

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[13] Of course the issue here is what constitutes the "right" path and can criteria be developed to identify it.

its entirety, while antirealists claim that that goal is to provide an understanding only of nature that is observable to the unaided senses. Grover Maxwell (1962) criticized the observable/unobservable distinction that antirealists rely on, by arguing that there is a gradation from the observable to the unobservable. Beginning with unaided vision, he progressed from sight through a glass window to more sophisticated aids such as the microscope and asked at what point one should no longer trust unaided vision. His point was that the aided/unaided distinction for the senses is arbitrary and does not automatically preclude scientific realism.

2.2.2 Antirealism

2.2.2.1 Instrumentalism

Although scientific realists claim that scientific theories provide a window into reality, the advocates of instrumentalism counter that theories do not provide such access. An instrumentalist is "one who holds that theories are tools or calculating devices for organizing descriptions of phenomena, and for drawing inferences from past to future. Theories and laws," Hacking adds, "have no truth value in themselves. They are only instruments, not to be understood as literal assertions" (1983, p. 63). Instrumentalists are not concerned with truth but with the pragmatic results of making predictions and either confirming or refuting the prediction through observation. The celebrated physicist, Stephen Hawking, argues, for example, that it is "meaningless to ask whether [a physical theory] corresponds to reality. All that one can ask," he claims, "is that its predictions should be in agreement with observation" (Hawking and Penrose, 1996, p. 4). Instrumentalism is thus a challenge to the very nature of what the world is like and is incommensurable with scientific realism.

2.2.2.2 Constructivism

Constructivists also challenge realism in terms of the nature of scientific theories and their entities. For realists, reality is discovered and there is a causal link between reality and its discovery. It is this causal link that social constructivists object to most.[14] For example, Bruno Latour and Steve Woolgar in their pioneering book on scientific practice claim: "we do not conceive of scientists using various strategies as pulling back the curtain on pregiven, but hitherto concealed, truths. Rather, objects…are constituted through the artful creativity of scientists" (1986, p. 129). Latour and Woolgar do not question the "solidity" of facts, but they do argue that "facts are thoroughly understandable in terms of their social construction" (1986, p. 107). For them, reality

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[14] For able discussions of constructivists' philosophical positions, see Hacking (1999) and Kukla (2000).

is not the *cause* of scientific facts or knowledge; but rather it is the *consequence* of this knowledge. Thus, reality as represented in the natural sciences depends thoroughly—or might we say *only*—on the process of social construction.

2.2.3 Medical Realism and Antirealism

Realism and antirealism are also debated in the philosophy of medicine literature, although few commentators subscribe to direct or representational realism. In discussing the role of the bacterium *Helicobacter pylori* in ulcers, for example, Paul Thagard defines medical realism accordingly: "By the term *medical realism*, I mean that disease and their causes are real and that scientific investigation can gain knowledge of them" (1999, p. 81). This notion of medical realism is a subset of scientific realism, because the components of the medical world, such as bacteria, instrumentation, and experimentation imitate scientific practice.

Thagard defends medical (scientific) realism on four counts. The first is the "recalcitrance of experimentation," in which medical scientists often obtain unexpected experimental results that are publicly reproducible. Next is the "reliability of instruments," in which "instruments provide robust results across different social groups" (Thagard, 1999, p. 239). Third is "causal efficacy of theory," in which well confirmed theories have pragmatic consequences for treating diseases. Finally is the "realist nature of scientific discourse," in which medical scientists talk about medical entities and causes in realistic terms.

Thagard also contrasts medical realism with the competing antirealist positions of empiricism, conceptualism, and social constructivism. Empiricism, a species of instrumentalism, is the position that only objects that are visibly observable are real and scientists should restrict reality claims to the visibly observable. So diseases like ulcers are real since they are observable, but the bacterial entities responsible for them are not. Conceptualism, a form of idealism, is the position that the history of the natural and medical sciences reveals that progress is not towards the true or real. Rather, that history reveals paradigm shifts in which the paradigms are often incommensurable with one another (Kuhn, 1996). Finally, social constructivism is the position that medical and scientific knowledge, hence the real, is the result of a social consensus within the appropriate medical and scientific community.

William Stempsey proposes a form of realism—value-dependent realism—for medical practice, particularly diagnosis, that mediates between scientific realism and social constructivism. "The value dependent realism I am advocating," writes Stempsey, "recognizes a reality that exists independent of our theorizing, but a reality that is necessarily dependent upon some particular conceptual apparatus if it is to be described. Reality," he continues, "may allow more than one empirically adequate description of it" (2000, p. 48).

Stempsey is committed to a realist position because people contract diseases and die from them. The reality of the illness experience is foundational. "We want our view of disease to reflect," asserts Stempsey, "the reality of an individual's pain and suffering as much as we want it to reflect the research in the basic sciences that have made Western medicine so empirically successful in treating disease in the twentieth century" (2000, p. 32). To that end, both facts and values are critical for understanding disease process and the patient's illness experience. "Value-dependent realism," argues Stempsey, "bridges the fact-value gap in its recognition that values are necessary for the determination of what the facts are. In a framework adequate to explain the concept of disease, classification of disease, and the diagnosis of disease, values," he concludes, "are as necessary as facts" (2000, p. 33).

Humanistic practitioners may often subscribe to one of the antirealist positions. For example, Cassell advocates a version of conceptualism: "diseases are not real things in the manner they are generally conceived to be. Disease," he continues, "are real in the same sense that ideas are real, concepts are real, and categories are real" (1991, p. 105). In other words, diseases are not independent entities such as bacteria; rather, they are abstractions or concepts that cannot be directly observed by the physician. As abstractions or concepts, diseases represent the complete manifestation of the pathophysiology: "Only the sum total of the expressions of the disease in this instance has actual touch-them-with-your-hands existence" (Cassell, 1991, p. 105). He, therefore, subscribes to conceptual antirealism. His aim is to reverse the overly objectification of disease in the biomedical model, which has made the disease often more real than the patient.

2.3 Summary

Medical causation and realism are notions that entities, such as patients, diseases, bacteria, are real, mind-independent objects, which occupy a medical worldview, and that there are causal connections among them. These notions are generally below the surface of the proceeding philosophical discussions concerning the patient as body or person, disease entities or health states, and diagnosis and therapeutics, which are discussed in the remaining chapters of Part I. The question, for instance, over whether disease entities such as bacteria and the infectious diseases they bring about or cause are real or not is a contested question.

Most biomedical practitioners subscribe to a notion of realism, especially scientific realism, in which the entities of the medical worldview are believed to be real or that there is a direct correspondence or immediacy between what we think the world is and the way the world actually is. Thus bacteria are real entities and are responsible for or cause real diseases.

Many humanistic practitioners subscribe to an antirealist position or, at least, to a weak form of realism, in which either non-visible entities like bacteria and notions like diseases are not real but abstractions and that disease causation does not involve simply an invocation of a single agent but multiple agents. Humane practitioners, like Cassell, subscribe to antirealism in order to reinstate the patient into medical practice. In this sense they address the quality-of-care crisis brought on by biomedicine's realism, which focuses more on the disease rather than the patient's experience of illness.

Chapter 3
Patient as Body or Person

One of the most important components of any medical worldview is the nature of the patient. The patient is and should be the center and focus of a medical worldview, for without the patient there literally is no need for medicine. Consequently, a medical worldview is important for perceiving the patient and that perception in turn shapes other components of a medical worldview, such as the nature of disease and health. The biomedical model envisions the patient as a mechanical body composed of separate parts that interact for functional purposes. Although there is interaction among the parts, it is minimal in nature and limited only to body parts. This view of the patient is, of course, a major reason for the quality-of-care crisis in modern medicine.

Humanistic or humane models, however, envision the patient as an embodied subject in terms of mind and body or mind/body integration, or as a unique person or self. In addition, the patient *qua* subject, person, or self, is located within a cultural and social environment or lifeworld. This view of the patient, according to humane practitioners, can help to resolve the quality-of-care crisis by taking into consideration the patient as a person rather than simply as a body part. In this chapter, the biomedical and humanistic conceptions of the patient are examined in terms of these differences.

3.1 Patient as Mechanical Body

Descartes is considered the traditional source for the mechanization of the human body. He split the mind from the body, and on the one hand he imparted to the mind a person's identity and vitality while on the other hand he reduced the body to a machine made from inanimate material. For example, Descartes stated in the *Treatise on Man*: "I suppose the body to be just a statue or a machine made of earth" (1998, p. 99). Drew Leder compares the Cartesian body to a corpse and argues that the Cartesian corpse has had an acute impact upon the practice of modern medicine: "Modern medicine, profoundly Cartesian in spirit, has continued to use the corpse as a methodological tool and regulative ideal" (1990, p. 146).

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

The acme of the human body's mechanization *vis-à-vis* medical practice was achieved by physicians motivated by Isaac Newton (1643–1728) and his mechanical philosophy. For example, Archibald Pitcairn (1652–1713)—one of the earliest physicians to appropriate Newton's mechanical philosophy—argued for a "mathematical physick" or medicine: "Physicians ought to propose the method of Astronomers as a pattern for their Imitation" (Brown, 1981, p. 216). After Newton, iatromechanism became the dominant approach to medical practice and increasingly influenced its practice until the present. Today, the standard model for medical knowledge and practice is simply an extension and application of the Newtonian mechanical worldview. For example, the Newtonian mechanical model is extended in terms of genetic and cybernetic bodies.

Based on the Newtonian mechanical worldview, the body is transformed into a scientific object that is reduced to a collection of separate body parts. In other words, it is just a machine with interchangeable components. For the biomedical practitioner the patient is assumed to be a material object or machine, which can be reduced to a collection of physical parts that can then be assembled to form a mechanical system. As Fredrik Svenaeus observes: "The body becomes a hierarchical structure—an organism framed in a special language" (2000, p. 49).

The body *qua* parts is composed of different anatomical systems, such as the respiratory or cardiovascular systems. These systems are, in turn, composed of various organs, such as lungs and hearts, which are made up of epithelial, muscular, nervous, and glandular tissues. Finally, to complete the hierarchy, these tissues are composed of diverse cellular types that are made up of a variety of molecules. Moreover, it is critical to note that the patient's body is generally stripped of its lived context: for the mechanized, scientific body is an abstract, universal object that obeys or is subject only to the physical and chemical laws of the natural sciences.

An important component in the development of the biomechanical model's view of the body is the rise of medical technology. Modern medical technology provides important objective and quantitative data concerning the patient's disease state. According to Ian McWhinney, "a constant theme [of medical technology] is the tendency for medicine to be dominated by the mechanistic values of objectivity, precision, and standardization" (1978, p. 299). This tendency fosters mechanization of the patient's body on two accounts. First, it provides the artificial parts and pieces that replace or substitute for the macro (organs) or micro (molecules) parts of the patient's body. Second, it provides a cadre of machines to which the patient's body is connected, forming body-machine hybrids. Technology, then, contributes significantly to the development of a medical machine-world—a world that physicians utilize to diagnose a diseased body part and to mend or replace it through pharmaceutical drugs or surgical procedures (Marcum, 2004b).

The medical machine-world in which the patient's body is located has developed tremendously over the last half of the twentieth century, from the stethoscope and microscope of an earlier era to today's heart-lung or dialysis machine and computerized or positron emission tomography (Jennett, 1986; Reiser, 1984). This machine-world approach also assisted the development of a number of pharmaceutical drugs, such as insulin, heparin, and various antibiotics, for treating disease. Certainly, these technological advances are responsible for many of the "miracles"—like open heart surgery and the management of childhood leukemia—in modern medicine. Moreover, advocates of the machine-world approach also used the approach to redefine the patient's body as mechanical.

The result of this mechanization is fourfold, with respect to the patient's body. The first is the fragmented body—the division of the body into individual, isolated parts. The next result is the standardized body, which is a generic body to which the patient's body *qua* clinical data is compared. The physician's task is to shape or reshape the patient's body to conform to the standard body deemed appropriate by the medical community. Often that body is the male body and only recently is a female standard body utilized for women. The third result is the transparent body. Medical technology, particularly imagining technology, allows physicians to peer into the inner reaches of the patient's body. However, the transparent body is not unproblematic: "Imaging technologies claim to make the body transparent, yet their ubiquitous use renders the interior body more technologically complex" (van Dijck, 2005, pp. 3–4). Imaging technologies often raise ethical dilemmas for both the patient and physician.

The final result of mechanization, and the most bothersome for the patient, is the estranged body—the alienation of the patient's body from the self and lived context and from other people. The patient no longer controls the body; rather, the medical profession takes ownership of the sick body or body part in an attempt to cure it. The patient or the patient's body becomes colonized by physicians: "When a person becomes a patient, physicians take over her body, and their understanding of the body separates it from the rest of life" (Frank, 2002, p. 52). Besides the colonization in which the physician assumes "center stage," the patient is also disembodied: "the person within my body was sent out into the audience to watch passively" (Frank, 2002, p. 53). The end result of colonization and disembodiment is loss of the patient's self and lived context.

The impact of the biomechanical model of the body for medical knowledge and practice is all too familiar. The patient's body *qua* machine is separated from the patient's self and lived context. The chief value of the biomedical model is the principle of separation, which "states that things are better understood outside their context, that is, divorced from related objects and persons" (Davis-Floyd and St. John, 1998, p. 17).

The aim of scientific medicine *vis-à-vis* the patient's objectified and mechanized body is to fix or replace the broken or missing part, generally without reference to the patient's lived context—for patients' bodies are nearly or basically the same. By splitting the body into a collection of parts, the patient as a person vanishes before the physician's gaze: "to view the human being as an assemblage of bodily parts and processes is to deprive the patient qua patient of every moral as well as every social dimension" (MacIntyre, 1979, p. 90).

The biomedical machine world is an abstract, scientific world made up of technological devices. Through fragmentation, standardization, transparency, and estrangement, the patient's body recedes into the background of this machine-world.

Patients as body parts become cogs in a medical machine-world—a world of interconnected machines in which the patient's body is but another anonymous and exchangeable device. For example, a kidney dialysis machine is used to treat multiple patients under similar conditions; for patients are exchangeable mechanical devices within this machine-world.

Since the patient as assembled body parts is just one more mechanical device in the medical machine-world, the patient becomes disembodied or invisible—for the patient's body recedes into the background of this machine-world. For example, physicians often trust the outputs of machines used to monitor a patient rather than the patient's account of the illness experience.[1] Rather than being an embodied person, the patient often becomes a collection of test results derived from the employment of medical technology.

The biomechanical model of the body is developing towards two hybrid forms of the human body: the genetic body and the cyborg body. As mentioned above, the patient's body is not only reduced to individual macro parts (organs) but also to micro parts (molecules). Of course the most important molecule, which has achieved iconic stature in western society, is the macromolecule responsible for the transfer of genetic information—DNA. The analysis of DNA and of the genes it composes has ushered in a new era of medicine, genomic medicine, especially in terms of the human genome project (Guttmacher and Collins, 2002). Since diseases are now genetic, treatment will consist of fixing or replacing defective genes. For example, medical scientists can now introduce foreign genes into the body to treat diseases, such as in gene therapy, thereby producing bodies that are genetic hybrids (Marcum, 2005b).

Besides the genetic hybrid body, there is also the hybrid that is part machine and part human—the cyborg. For example, a silicon chip transponder was implanted into Kevin Warwick's arm on 24 August 1998 (Warwick, 2000). The chip allowed him to be connected to a computer, which was able to identify his position as he traveled through out the Department of Cybernetics at the University of Reading, U.K., and which then opened doors and turned on lights for him as he moved about the department. According to Donna Haraway, people are already cyborgs: "By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs" (1991, p. 150). We have become cyborgs in the sense that the line between human and machine is indistinct and blurred, especially in terms of medicine: "Modern medicine is also full of cyborgs, of couplings between organism and machine, each conceived

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[1] A powerful illustration of the patient receding into the background of modern medical technology is the case of "Barbara." In an episode of *Medicine at the Crossroads* (Thirteen/WNET, 1993) entitled 'Code of Silence', a team of physicians checks the condition of Barbara—a quadriplegic patient. While the attending physician informs the team of the patient's vital statistics, the patient tries desperately to tell the physician that she is short of breath. The physician does not initially hear her because his attention is on the various machine monitors to which the patient is connected. Once he does hear her, however, he informs her that she is all right because the monitor that displays oxygen saturation of the blood reads 100%.

as coded devices" (Haraway, 1991, p. 150). Both the cyborg and genetic hybrids represent important means by which to enhance the capabilities of the human body.

3.2 Patient as Person

In humanistic or humane models of medicine the patient is viewed as an organism, composed generally of two separate parts: one physical and the other psychological or mental. The patient as organism is differentiated both as constituting body and mind and also as embedded within an environment. Moreover, the organism is more than simply the sum of its parts but has features that emerge from the organization of those parts. Instead of reducing the patient to the physical body alone, the humanistic practitioner encounters the patient as an organism composed of both body and mind within an environmental context: "the embodying organism is a *complex whole*—an entire series of differently interrelated sets of members, structures, and patterns of interfunctioning, evincing multiple and multiply connected contextures" (Zaner, 1981, p. 45).

Rather than being just a machine composed of individual parts separate from any background or framework, the patient is an organism within a socioeconomic environment; and as an organism the patient exhibits properties that surpass the aggregation of those parts. For other humane practitioners, the patient is more than an organism and its environment, which are still reducible scientific objects. Rather, the patient is an embodied subject, a person, or a self. In this section, the phenomenologist's notion of embodied subject, Eric Cassell's notion of personhood, and Alfred Tauber's notion of selfhood are explored to provide a richer concept of patient than simply the biomedical model's mechanical object.

3.2.1 Phenomenology's Notion of Embodied Subject

For those humanistic or humane practitioners utilizing phenomenological insights, the patient is a subject who occupies a lived context or, in Husserlian terms, a lifeworld.[2] In other words, the patient is physically embodied, for the phenomenologist, as a subject in a unique lifeworld. "The lifeworld," according to Michael Schwartz and Osborne Wiggins, "is the sphere of prescientific activity…the realm of everyday social interaction and practical projects…The human being who inhabits and acts in the life-world is the embodied subject" (1985, p. 341). This world is not the physical universe that science depicts; rather, it is the world of the everyday that is made up by our personal activities and projects. It is the world that is lived

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[2] For further discussion of Husserl's lifeworld and Heidegger's being-in-the-world in the realm of medical knowledge and practice, see Svenaeus (2000, p. 84).

bodily, through which we impart meaning to our lives. The patient is embodied concretely in the here and now (phenomenological space and time) and not abstractly in a universal world that occupies no specific place and occurs at no particular time (physical space and time).

During the twentieth century, phenomenologists, such as Edmund Husserl (1859–1938), Martin Heidegger (1889–1976), Jean-Paul Sartre (1905–1980), and Maurice Merleau-Ponty (1908–1961), among others, radicalized life's everyday experiences by making them explicit and by so doing explicated the meaning of such experiences through an analysis of their intentional structure. According to Husserl, western science was facing a major crisis: positivist natural science fails to answer or even to address fundamental questions about human nature and existence. He argued that we must return to the "things themselves"—to concrete phenomena—instead of turning towards their scientific and theoretical abstractions, in order to uncover their meaning. For what makes possible such abstractions is the concrete world in which we daily live. This everyday world or lifeworld is the ground or foundation upon which the meaning of human existence rests. According to Richard Baron, "phenomenologists seek to reunite science with life and to explore the relationship between the abstract world of the sciences and the concrete world of human experience" (1985, p. 608).

Modern medicine is also facing a crisis similar to that faced earlier by science. However, for medicine the crisis revolves around the separation between the patient's concrete world of illness and the physician's abstract world of disease. Modern medicine's crisis is one of quality-of-care; for the clinician's gaze, listening, or touch is generally towards the patient's diseased body and only derivatively towards the patient's suffering. Since the current quality-of-care crisis is largely due to the biomechanical model of the body it can only be addressed by resituating the patient within the context of an everyday lifeworld, instead of thrusting just the body into an artificial machine-world. Again to quote Baron: "If we can adopt a phenomenological perspective, we can try to enter the world of illness as lived by patients rather than confining ourselves to the world of disease as described by physicians" (1985, p. 609).

As embodied subjects or lived bodies, patients create individual, unique lifeworlds. The body is personalized in a lived context or environment; for the subject is not composed of separate Cartesian body parts but is an integrated bodily unit that is situated in a specific location and time. Patients, as embodied subjects, "have bodies to the degree to which they appropriate the physical conditions of their individuality and become integrated (and not merely unified) psychological beings" (Deutsch, 1993, p. 5). At the pre-reflective level, the embodied subject "ex-ists" the body: "I am 'embodied' in the sense…that I *am* my body" (Toombs, 1993, p. 52). In other words, the body is the medium in which a subject carries out daily tasks and activities intentionally and through which a subject comes to know the body not through abstracting it but through living it.

The body, then, is not some *thing* that a subject possesses as an object; rather, it is a lived, integrated unity that is not readily divisible into a body on the one hand and a mind on the other. At the reflective level, the body may be grasped as an object distinct from the self; but it is still an object within a lifeworld. It need not be simply an object of scientific investigation, i.e. as a theoretical or an abstract thing. In other words, the body is not experienced as molecules, cells, tissues, etc.; rather, it is experienced as an integrated unity through which a subject "in-habits" a lifeworld.[3]

The phenomenological model of the body has developed in two directions *vis-à-vis* modern medical practice. The first is towards transformation of the mechanized body—whether in its molecular or cyborg manifestations—into an integrated body. Embodiment is stretched to include and integrate the artificial enhancements of, or additions to, the body. As the mechanical body becomes more artificial, e.g. computer chips or foreign genes, the integrated body strives to incorporate modifications of and additions to the body into a unique lifeworld. Patients must reclaim their identity as embodied, not abstracted, subjects and as integrated bodily units embedded in unique lifeworlds.

The second development is the transformation of the empirical text body—as represented by the texts obtained from the medical history and examination—into a lived body. Besides reducing the patient to a mechanized body, scientific medicine also reduces the patient to an empirical text body that often replaces the physical presence of the patient (Daniel, 1986). For example, the medical history represents the patient as an empirical text in which the physician gathers data by asking questions of the patient, who then answers them with little extraneous input concerning the illness experience. The medical examination also represents the patient as an empirical text, i.e. as a set of numbers obtained from laboratory tests or as a set of written descriptive phrases obtained from the physician's prodding and poking the patient's body.[4] "If the body is a meaningful phenomenon…this is so because," argues Svenaeus, "it is *lived*, an aspect of our being-in-the-world, and not because it is written" (2000, p. 139).

In contrast to the story of territory—and the reduced, mechanized body it assumes—the approach to the patient's body should be one of wonder (Frank, 2002). "Wondering at the body," according to Frank, "means trusting it and acknowledging its control" (2002, p. 59). Wonderment is not meant to replace therapy, but rather to reorient the relationship between the two: "wonder is an attitude in which treatment can best proceed" (Frank, 2002, p. 59). Through this wonderment at the body, the patient regains the self: "Illness taught me that beyond anything I can do, the body simply is. In the wisdom of my body's being I find myself, over and over again" (Frank, 2002, p. 63). Wonderment at the body, then, allows a patient to apprehend that he or she is an embodied subject, who brings meaning to his or her lifeworld—whether in health or in illness. To reduce the body at any time to body parts, is to lose the integrity of lived experience as an embodied subject.

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[3] Leder makes a similar point: "[skills and habits] are enveloped within the structure of the taken-for-granted body from which I in*habit* the world" (1990, p. 32).

[4] The empirical text of the patient's body obtained from the medical interview and physical examination must be contrasted to the narrative text of the patient's illness story. This latter text is important for the practice of a more humane medicine (Charon, 2001, 2006; Kleinman, 1988).

3.2.2 Cassell's Notion of Person

"Unlike other objects of science," argues Cassell, "persons cannot be reduced to their parts in order to better understand them" (1991, p. 37). According to him, "what is lacking in twentieth-century medicine is an adequate consideration of the place of the person of the patient" (Cassell, 1991, p. viii). The reason for this lack is that contemporary medicine focuses on the disease and not the sick person and subscribes to the myth that different persons who have the same disease basically have the same illness or sickness. But different persons who have the same illness can have vastly different illness experiences. "The job of the twenty-first century," claims Cassell, "is the discovery of the person—finding the sources of illness and suffering within the person, and with that knowledge developing methods for their relief, while at the same time revealing the power within the person as the nineteenth and twentieth centuries revealed the power of the body" (1991, p. x). To that end he proposes a different notion of what constitutes the nature of the person, especially as it relates to understanding the patient.

Cassell rejects traditional substance or interactionist dualism, as well as reductive monism. The question of how the mind affects the body is the wrong question, "because it presumes that there is a thing called the mind which is separate from the body, that the body is passive to the mind, and that the mind's essential nature is that it can cause changes" (Cassell, 2004, pp. 221–222). Cassell begins with different presumptions: (1) the person is a single entity and (2) distinctions among mind, body, and environmental context are artificial. What connects these artificial distinctions for Cassell is meaning: "*meaning is the medium through which thought flows into body and the body flows into thought*" (2004, p. 223).

Specifically, meaning is mediated through emotions and feelings. In other words, people attach various meanings to their life experiences though their emotions and feelings. Importantly, "the emotions or the meanings of which the emotions are a part *do not cause* the physical phenomena; the physiological responses are *part of* the emotion and the meaning" (Cassell, 2004, p. 236). Meanings, and the values upon which they depend, are important for understanding a patient's illness and the suffering associated with it.

What is a person? Cassell initially treats the question as two separate questions, one concerning the particularity of the person *qua* person and the other in terms of the measure of a person. Importantly, the initial discussion is embedded in terms of the nature of suffering, especially with respect to the illness experience. Although Cassell discusses over a dozen features that constitute the notion of person in the initial description, they can be grouped together into two categories: the first is composed of those features that pertain to the person as an individual, the second of those features of the person within a social context.

The features that make up Cassell's first category of person in terms of his or her individuality include an individual's body, personality or character, regular behaviors, activities, public and secret life, past, future, and transcendent dimension. Each of these features has an important impact on how a person responds to illness, especially in terms of suffering, or may be destroyed by an illness. For example, people vary greatly in their response to illness based on their personality or character traits. Also, a person's past is particularly important in providing a context for the experience of illness: "Life experiences—previous illness, experiences with doctors, hospitals, medications, deformities and disabilities, pleasures and successes, or miseries and failures—form the background for illness" (Cassell, 1991, p. 38). Finally, illness may not only destroy the public life but also the secret life lived in unrealistic fantasies, as well as a person's creativity and ability to lead a productive life.

Cassell's second category of person involves an individual's personal and cultural context and relationships and includes relationships with self, family, and social and political institutions. Again, these features have a tremendous impact on the experience of illness and illness can compromise or destroy these features. According to Cassell, "the extent and nature of a sick person's relationships strongly influence the degree of suffering that a disease may produce" (1991, p. 40). For example, the experience of illness may be exacerbated if the patient feels that he or she does not live up to personal or family expectations. Of course, cultural norms play a critical role in how society treats the sick. "Cultural norms and social rules," observes Cassell, "regulate whether someone can be among others or will be isolated, whether the sick will be considered foul or acceptable, and whether they are to be pitied or censured" (1991, p. 39).

With this general description of the nature of person in the background, Cassell addresses the question, especially relevant for clinical medicine, "Who is this person?" (1991, p. 158). For Cassell, this question is what demarcates the clinical medicine from medical science. Clinical medicine must be concerned with the particular patient *qua* person before the physician's gaze, not with an abstraction or generalization of a diseased body part as envisioned by medical science. To that end, the physician must enter into the patient's world or context and especially the meaning or value structure that under girds the patient's world.

Access to the patient's world, for Cassell, is through letting the patient tell the physician his or her illness story. The patient as person is not an intrusion into the patient-physician relationship but its foundation. The physician must also act as an authentic person towards the patient. Finally, another important source for accessing the patient's story is the physician's own knowledge of people: "the doctor's personal knowledge of people—their language, behaviors, emotions, and values—provides the foundation for knowing about the individual person" (Cassell, 1991, p. 172).

Finally, Cassell addresses the question of the measure of a person. A person and particularly the patient cannot be measured simply in terms of quantified data, especially in terms of numerical values or brute laboratory facts. "I believe," confesses Cassell, "that the objective facts which are the basis of medical science, as necessary as they are, are in themselves insufficient to the clinician's task" (1991, p. 179). Rather, the true measure of a person or patient must also include moral values and personal aesthetics. It is these values and aesthetics, and not simply an abstracted body part or quantified data, which make the patient who stands before the physician unique. For, "clinicians treat particular patients in particular circumstances at a particular moment in time, and thus they require information that particularizes the individual and the moment" (Cassell, 1991, p. 179).[5]

Since scientists consider science to be value-free, clinicians follow suit for medicine in order to justify their epistemic claims. "For all its apparent attractiveness, however," claims Cassell, "a value-free medicine is a contradiction in terms" (1991, p. 185). Values are critical in the practice of medicine: "applying medical science to particular patients mandates thinking in terms of values as much as in terms of the objective facts of the body" (Cassell, 1991, p. 107).

According to Cassell, there are at least five sources of values. The first is society in terms of the values it holds, especially in terms of the health of its members. The next source is the medical profession and its values, which often reflect its own goals in treating illness. The third source is the physician, both in terms of his or her personal and professional values. The next source is the individual, whether sick or not, with the final source being the "wholes and wholeness" that constitute "systems."

There is no algorithm by which to identify values and to utilize them in treating patients. For Cassell, however, there are three steps involved in identifying values. The first is to recognize that "people do display their values in their presentation to the world, their language use, or in other behaviors" (Cassell, 1991, p. 190). Importantly, the physician must realize that the patient's values may not be consistent with other values he or she holds. The next step is "to access this information in a manner that both accurately and precisely reflects the patients' values" (Cassell, 1991, p. 190). Physicians must be open to the patient, in order to allow the patient to teach the physician about the patient's values. Accessing the patient's values is demanding work, but the reward is the capability "to care for *this person*" (Cassell, 1991, p. 192). The last step is to learn "to reason about values in a logical manner" (Cassell, 1991, p. 190). Just because a patient's values are personal and subjective does not mean that a physician cannot evaluate them in a rational manner.

Besides values, the measure of a person is taken in terms of personal aesthetics. Although aesthetics is subjective and often based on feeling, it does not mean it is "idiosyncratic." Aesthetics are important with respect to measuring a person because it functions in terms of the self-creative process by which a person matures. A person is always in the process of becoming. Aesthetics also provides information that helps a physician to evaluate the veracity of a patient's story of the illness experience. "There is a knowledge of person," according to Cassell, "that can only be considered in aesthetic terms, the 'correctness' of the story of the patient's life" (1991, p. 202). Without that knowledge, the physician may fail to know this patient and to alleviate his or her suffering.

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[5] General, abstract knowledge is not the problem *per se* but its application. "General or universal categories, therefore," writes Cassell, "can either promote or hinder individualization; the choice lies with the person utilizing them. The problem of applying the general to the particular does not lie in the general category—the universal *qua* universal—it lies in an inadequate knowledge of what makes this individual particular—an inadequate characterization of the individual" (1991, p. 180).

3.2.3 Tauber's Notion of Self

In *Confessions of a Medicine Man*, Alfred Tauber develops a notion of the patient in terms of self. He too rejects the traditional dualistic model of separate mind and body, as well as the reductionist model of contemporary medicine that treats only the physical body. The problem with mind-body dualism is that there is no adequate means to connect mind and body for the practice of medicine: "In the medical context, the mind/body split is perhaps useful for a scientific approach, but curing illness is not exclusively an epistemological problem" (Tauber, 1999, p. 111). Rather, curing illness is fundamentally an ethical issue that requires a richer conception of the patient than simply a body part here or a mind there. Tauber's approach to the patient is in terms of a self, and not simply an isolated self but one in relationship to other selves.

Tauber defines the self not in terms of an autonomous agent independent of other autonomous agents, as has been the tradition in western society since the Enlightenment, but rather in terms of the other. For Tauber, "a person is not a self-contained entity, self-defined or in any sense independently 'established,' but [a person] rather becomes authenticated in his encounters with others, whether physical, social, or divine" (1999, pp. 23–24). Thus, the person *qua* self always comes with a context that includes the other. The self and other are intimately connected, serving as two poles which constitutes a relational whole. In fact, "the *other* serves a constitutive role in defining the *self*" (Tauber, 1999, p. 43). For a self realizes itself when in relationship with the other. Alone, a self cannot realize itself: "when one attempts to arrest that experiencing subject by reflecting on its experiences, we lose our own subjectivity and substitute an alien objectivity that is fundamentally incapable of capturing what we intuitively refer to as our inner identity, the experiencing self" (Tauber, 1999, pp. 52–53). The self is not experienced objectively or subjectively but reflexively.

Because of the relational basis between the self and the other, the self is a moral class. " 'Moral' pertains," Tauber insists, "to the general domain of human relationships, and in this regard the Self is the moral vehicle that we employ to discuss how we ought to interact" (1999, p. 81). He founds the notion of self as a moral class on the philosophy of the "Other," as expounded by Emmanuel Levinas (1906–1995). According to Levinas, an individual's beingness is part of otherness or alterity: "The Self is not only defined in relation to the Other, but the very nature of our being resides in that intersubjectivity" (Tauber, 1999, p. 85). The other's response to one's self provides occasion for accessing the nature of one's self. This is especially true as one goes about acting in the world; an other's response to one's actions help to define one's self. Thus, the self emerges as part of a dialectical process. And since this process is relational, its actions are fundamentally moral, i.e. we are first ethical animals before we are knowing animals. This moral nature of the self is evident in the call of the other *vis-à-vis* responsibility: "The Self is defined not simply by the Other, but by its *responsibility* to the Other" (Tauber, 1999, p. 90).

Tauber further develops the notion of self, especially with respect to reforming medical ethics and with respect to the patient-physician relationship, in *Patient Autonomy and the Ethics of Responsibility*. He proposes a moral epistemology, in which the facts of scientific medicine are balanced with the values of both the patient and the medical profession. The medical profession's primary value should be a responsibility to care for the autonomous patient in a humane manner. "I am seeking a construction of selfhood and autonomy," claims Tauber, "that allows for a balance of rights and responsibilities consistent with the deeper moral agenda of an ethics of care" (Tauber, 2005, p. 85). To that end, he distinguishes between the atomistic and social self, especially in terms of the role of reason and passion in autonomous choice and of individual and communal rights and responsibilities.

The social self is "fundamentally what our social identifications confer on us" (Tauber, 2005, p. 86). Although there is a distinct biological substrate that makes up each self, there is no "core" self. Socialization is what forms the self from the biological substrate. In other words there is no self apart from one's social experience. The atomistic self, however, represents the unique and individual identity that can be distinguished from the social self, which the world bestows upon us. The atomistic self "occupies no special place or unique focus of understanding, for each individual possesses a secure objectivity to survey the world from any perspective, and by tapping into a universal reason, to see the world rationally and objectively as all others would" (Tauber, 2005, p. 89). The notion of an atomistic self is critical for the scientific enterprise, since it provides a separate identity, the "core" self, independent of the world required for investigating that world. The atomistic self is best represented by American individualism, in which the person *qua* individual is self-contained and independent of others.

Finally, Tauber explores Kant's notion of the rational self in counter-distinction to Hume's notion of the passionate self, as a basis for ethical or responsible action. For Kant, the self is a rational agent to which all other characteristics are subject. The consequence of this position is that the person becomes an objectified core: "comparable to a natural object, 'the self' or the ego could not be directly perceived and our self-consciousness then became another natural object for scrutiny" (Tauber, 2005, p. 96). Kant's rational self is in response to Hume's passionate self. "Hume," according to Tauber, "gave up the search for a continuous self, or a core identity or ego, and settled for a bunch of perceptions, linked by memory as sufficient for the psychological ease of identifying our personhood" (2005, p. 96).

The issue, according to Tauber, is how to resolve the tension between these notions of self in order to rescue autonomy from being simply individual rights. The resolution is to balance such individual rights with an ethics of responsibility to achieve a "relational autonomy" based on a "relational self." To that end, he proposes a synthesis of the atomistic and social selves and the rational and passionate selves to preserve the autonomous self in medicine. These facts of selfhood complement each other in terms of providing a richer notion of the self.

3.3 Summary

The predominant model of the patient in modern biomedicine is the machine. Practitioners of the biomechanical model reduce the patient to separate, individual body parts in order to diagnose and treat diseased body parts. Utilization of this model leads, in part, to a quality-of-care crisis in medicine, in which patients perceive physicians as not sufficiently compassionate or empathetic towards their physical and existential suffering.

Humanistic or humane models of the patient, such as the phenomenologist's notion of embodied subject, Cassell's notion of person, and Tauber's notion of self, are proposed to address the reduction of the patient to body parts and consequently to alleviate the quality-of-care crisis. According to these notions, the patient is viewed as an embodied subject within a lived context, or a person in terms of individual and social features, or a self in relation to the "other" and in response to the call of the "other." Through these views the physician comes to understand the disruption illness causes in terms of existential suffering, in the patient's everyday world of meaning.

Chapter 4
Disease or Illness and Health or Wellbeing

The precise nature and role in medical practice of disease, health, illness, wellbeing, and associated notions such as sickness and wholeness, are fervently debated in the current medical literature (Boyd, 2000). For example, Germund Hesslow (1993) claims that the distinction between health and disease is “irrelevant” for medical practice, since a disease is not required for soliciting medical attention.[1] The purpose of the following chapter is not to provide a definitive answer or solution to the debate but rather to explore the possibilities of an answer or a solution in order to clarify further the debate. As Lawrie Reznek contends, philosophy is germane to the discussion concerning the nature of disease: “Philosophy cannot cure disease, but it certainly can cure inappropriate disease attribution” (1987, p. 11). It is in this spirit that I undertake a discussion of the notions of illness and wellbeing.

The participants in the debate can be divided into two camps: the naturalists and the normativists. According to naturalists, disease and health are descriptive concepts that can be used to define the objective and real state or condition of a person. These concepts are strictly neutral to any personal or social values. According to the normativists, however, these concepts depend upon personal and social values. Reflecting these values, normativists often utilize terms like “illness” and “wellbeing” to define a person’s subjective or constructed state or condition. In general, biomedical practitioners champion naturalistic notions of disease and health, while humanistic or humane practitioners advocate normativist notions of illness and wellbeing.

The biomedical model is responsible for the predominant conceptions of disease and health that inform the practice of medicine in the industrialized west. Disease is consigned to dysfunction or lost of a body part, while health is defined with respect to the (absence of the) disease state. A person is healthful if no palpable disease is present or requires treatment. Health, then, is a default state and is what

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[1] As Hesslow writes: “although we may sometimes talk imprecisely as if having a disease was a sufficient reason for seeking medical treatment, it is not really the presence of a disease that is crucial, but the fact that some medical intervention may be beneficial and that it is within the physician’s power to help the patient” (1993, p. 7). He concludes that mature medical practitioners would be better off abandoning the notion of disease altogether.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

keeps one from enlisting a physician's services. These notions of disease and health have certainly contributed to the quality-of-care crisis. By reducing the patient to a diseased body part, the patient's suffering and existential concerns are often ignored and go unaddressed by the biomedical practitioner.

Humanistic or humane modifications of the biomedical model attempt to include the patient's suffering and existential concerns as part of the illness experience and to address them through therapeutic procedures. For humanistic models, health is not a default state but is defined in positive terms, often with respect to a person's wellbeing or wholeness. The humane practitioner's concern is not just the absence of disease in the patient but adoption of a lifestyle that promotes being well both physically and mentally (and, at times, spiritually). In addition the distinction between the biomedical and humanistic or humane models *vis-à-vis* mental health and illness is explored, when appropriate.

4.1 Disease or Illness

According to the biomedical model, the nature of disease, as well as health, can be defined in terms of the material and physical. "There is an objectivity about disease," according to Marshall Marinker, "which doctors must be able to see, touch, measure, smell" (1975, p. 82). Disease, whose cause can be identified by scientific investigation and clinical diagnosis, is an objective and real state that is reduced to a material or physical entity or condition.

This reductive notion of disease is evident in medical dictionaries. For example, in the twenty-sixth edition of *Stedman's Medical Dictionary*, the first definition of disease reads: "An interruption, cessation, or disorder of body functions, systems, or organs" (Stedman, 1995, p. 492). Even mental or behavioral disease is reduced to the biochemical and physiological operations of the brain. "Biomedical dogma," according to Engel, "requires that all disease, including 'mental' disease, be conceptualized in terms of derangement of underlying physical mechanisms" (1977, p. 130). This notion of disease is predominate in the biomedical model and influences its conception of health. As noted already, health, even mental health, is simply a default state that represents the absence of disease.

While the biomedical physician is concerned with the patient's disease state, the humane physician is solicitant for or empathetic over the patient's illness and the suffering associated with it. Cassell distinguishes between disease and illness, accordingly: "Diseases…are specific entities characterized by disturbances in structure or function of any part, organ, or system of the body. Illnesses…afflict whole persons and are the set of disordered functions, bodily sensations, and feelings by which persons know themselves to be unwell" (1991, p. 49). Physicians should not deal exclusively with disease as an objective entity but with the sick person: "the object of the physician's search, the disease entity, does not exist in concrete reality but is merely an abstraction without independent existence. The only thing the clinician can work on (a paradox for medical science) is *this* sick person" (Cassell, 1991, p. 108).

In the remainder of this section, the various conceptions of disease, including the ontological, physiological, evolutionary, and genetic conceptions, are discussed first, followed by a discussion of the humanistic or humane model's conception of illness.

4.1.1 Disease

Traditionally, there are two conceptions of disease: the ontological and the physiological. The ontological conception is concerned with disease causing entities, while the physiological conception involves deviation from functional norms. Christopher Boorse furnishes the best known, if not the most recognized and controversial, physiological conception of disease based on the notion of "species design." Two additional conceptions of disease have recently been championed in the literature—the evolutionary and genetic—with the genetic conception taking center stage, especially with the inception of the human genome project. Although no one conception captures completely the nature of disease, these conceptions provide, according to biomedical practitioners, a means for distinguishing disease states from defects, deformities, and disabilities.

4.1.1.1 Ontological Conception

According to the ontological conception, "diseases are *things*, entities with a separate existence from the person who has them" (Cassell, 1991, p. 77). But, as Engelhardt argues, the ontological conception is ambiguous in terms of referring either to a thing (*ens*) or to a logical type: "Medical ontology in the strong sense refers to views in which disease is conceived of as a thing, a parasite, in contrast with 'Platonic' views of disease entities in which diseases are understood as unchanging conceptual structures" (1975, p. 128).

In the strong sense, a disease entity is an infectious agent that invades a host or patient and directly causes the disease condition. These agents may be, for example, a pathogen, virus, parasite, or bacterium. According to Rudolf Virchow (1821–1902), however, a distinction must be made between the disease entity itself (*ens morbi*) and the entity as cause of a disease (*causa morbi*)—for the disease entity may be present without disease symptoms (Virchow, 1958). In the weak sense, there are disease patterns, in terms of symptoms, which "are interpreted as enduring disease types often without an immediate connection to a particular theory of material disease entities" (Engelhardt, 1975, p. 129).

The best known example of the ontological conception is the germ theory of disease. The germ theory was first proposed at the end of the nineteenth century and was instrumental in explaining many deadly infectious diseases that no longer plague the industrial west because of the discovery of antibiotics. Recently, however, bacteria that cause infectious diseases are becoming resistant to antibiotics (Le Fanu, 2002).

According to the germ theory, disease, especially infectious disease, is the result of a microorganism that is able to overcome the body's immunological defense system and thereby damage the patient's tissues and organs. For example, septicemia, which was called the putrid disease, was shown to be due to a "septic vibrio" (an oxidase-positive, gram-negative bacillus) from infected organisms (Pasteur, 1996). Of course, the discovery of penicillin and its first clinical use on a forty-three year old policeman in 1941 revolutionized medicine in that infected patients could be successfully cured with antibiotics (Le Fanu, 2002).

4.1.1.2 Physiological Conception

Traditionally, the physiological conception of disease is contrasted with the ontological conception. From the physiological point of view, disease, which is an abstract concept, should not be confused with a concrete object. According to the physiological conception, disease is deviation from a functional norm or general regularity. The laws of physiology are essential for understanding the pathological nature of a diseased state. Thus, diseases are "more contextual than substantial, more the result of individual constitutions, the laws of physiology and the peculiarities of environment, than the result of disease entities" (Engelhardt, 1975, p. 131).

The basis of the physiological theory of disease is the notion of normality. Edmond Murphy has identified several of kinds for normality, especially in terms of statistical variation. The first is "a metrical variate with a particular probability density function that is conveniently described by some such term as 'Gaussian' " (Murphy, 1997, p. 145). The next two kinds involve a class representative such as an average or a mode and the frequently experienced in a class such as the ordinary. Many physiological processes vary within a normal range of measured values. For example, normal blood pressure ranges from 90–140 mmHg for systolic pressure and from 60–90 mmHg for diastolic pressure. Depending on one's physical activity, the pressure varies within this range and returns to normal under resting conditions. If the pressure is outside the normal range under resting conditions, then it may indicate a disease or pathological state. The laws governing these physiological processes are part of the homeostatic mechanisms that ensure stable bodily functions (Cannon, 1939).

In the mid 1970s Christopher Boorse proposed a physiological notion of disease, in which he initially made a distinction between disease and illness. Disease, according to Boorse, interrupts specific functions performed by members of a species and is a value-free concept. Illness, however, involves personal or individual and social or cultural values in that disease is generally "undesirable" (Boorse, 1975, p. 61). In other words, disease is a natural concept and therefore theoretical while illness is a normative concept and therefore practical. The normative conception of disease among philosophers of medicine, according to Boorse, reflects a "psychiatric turn" that misrepresents the "physiological" basis of disease.

Boorse ultimately refined the above conception of disease in terms of normal function: "A *disease* is a type of internal state which is either an impairment of normal functional ability, i.e., a reduction of one or more functional abilities below typical efficiency, or a limitation on functional ability caused by environmental agents" (1977, p. 567). This conception hinges on the meaning of "normal functional ability." This refers to members of a "reference class," i.e. "a natural class of organisms of uniform functional design," who contribute in a typically statistical way to the survival and reproduction of the species (Boorse, 1977, p. 562). Functionality depends not on the function's causal history, as advocated by Larry Wright, but on its contribution to a goal (Boorse, 1976).

Boorse (1987) later recasts the conception of disease in terms of a normal-pathological distinction, especially in terms of function. Again, the distinction is a naturalistic one and the pathological is defined in terms of statistically suboptimal functioning of a part. "A condition of a part or process in an organism is *pathological*," according to Boorse, "when the ability of the part or process to perform one or more of its species-typical functions falls below some central range of the statistical distribution for that ability in corresponding parts or processes in members of an appropriate reference class of the species" (1987, p. 370).

Boorse eventually called his naturalistic conception of disease (and health) the "biostatistical theory" (BST), "a name emphasizing that the analysis rests on concepts of biological function and statistical normality" (1997, p. 4). Disease is an inability of species members to conform to the notion of "species design." Species design involves

> the internal functional organization typical of species members, which (as regards somatic medicine) forms the subject matter of physiology: the interlocking hierarchy of functional processes, at every level from organelle to cell to tissue to organ to gross behavior, by which organisms of a given species maintain and renew their life
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> (Boorse, 1997, p. 7).

A disease or pathological state, then, is disruption of a part-function at some level of the above hierarchy.

Although Boorse's notion of disease has been criticized from a variety of perspectives, critics are particularly adverse—from an evolutionary perspective—to his notion of "species design."[2] For example, József Kovács (1998) insists that Boorse's notion does not take into consideration the change of species design over geological time. In fact, there is a substantial "time lag" between the design of a species and the changing environment, such that "species design does not always mean health, but it can represent—by the dramatic changes of the environment—disease and death" (Kovács, 1998, p. 32). In other words, current species design is usually out of step with changes in the environment. Moreover, there is never an ideal species design to which individuals comport but rather a significant variability that maintains adaptability *vis-à-vis* changing environments (van der Steen and Thung, 1988).

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[2] Boorse's notion of disease engendered a fair amount of criticism; see Boorse (1997) for his response to it. For more recent criticism, see Cooper (2002).

4.1.1.3 Evolutionary Conception

Evolutionary biology provides another approach to defining abnormality and disease. According to Randolph Nesse, a statistical approach is inadequate to determine what is normal; rather, what is required is “nothing less than a complete knowledge of what the body is for, how it works, and, especially, how it came to have its current form” (2001, p. 38). The design and function of the body are the result of evolutionary processes, especially by means of adaptation though natural selection. Over the course of the species evolution *vis-à-vis* the body, specific adaptive mechanisms evolved to defend the body against, for example, microorganisms that would compromise the body’s integrity and thereby reduce the organism’s fitness, especially in terms of reproductive capacity.

According to the evolutionary conception of disease, disease is defined in terms of adaptive mechanisms. In other words, disease is the result of maladaptation, e.g. to ward off a microorganism that would cause the body serious harm or even death. “Failure to express a defense in response to a challenge,” for Nesse, “results in a disease” (2001, p. 38). Consequently, evolutionary mechanisms shape normality and its maintenance; and, disease is then defined as “a disadvantageous difference from the normal” (Nesse, 2001, p. 41).

The evolutionary conception of disease has important ramifications for understanding the nature of disease, especially in terms of the body’s defenses to disease-producing conditions and agents. According to Nesse, evolutionary processes like natural selection “should shape mechanisms that regulate defenses to give optimal benefit” (2001, p. 39). For example, fever is a symptom of many diseases that biomedical practitioners often treat. However, fever is an adaptive mechanism to defend the body against infectious agents like bacteria and viruses. “Medications that block fever,” contend Nesse and George Williams, “apparently interfere with the normal mechanisms that regulate the body’s responses to infection, with results that may be fatal” (1996, p. 28). Moreover, studies demonstrate that blocking fever in adult rabbits increases their mortality rate. However, Nesse and Williams acknowledge that there are conditions in which blocking fever is necessary.

Although Nesse recognizes that no single definition is adequate, he defines disease in terms of biological or evolutionary function: “An individual has a disease when a bodily mechanism is defective, damaged, or incapable of performing its function” (2001, p. 45). Critics of evolutionary medicine challenge the appropriateness of relying on biological function to determine the disease or health of a person. For example, Anne Gammelgaard argues that biological function derived from evolutionary theory is inadequate to determine function in terms of medical significance: “What is functional from an evolutionary perspective is not necessarily functional from the perspective of the patient. This is primarily due to a difference in the perspective from which doctors and evolutionary biologists consider bodily functions” (2000, p. 112). In other words, healthcare professionals are concerned with the welfare of the individual patient while the evolutionary biologists investigate the biological fitness of a unit of selection, which may not necessarily be important to any particular organism’s health.

4.1.1.4 Genetic Conception

With the inception of the genetic revolution in the twentieth century a "geneticisation" of the conceptual basis of medicine occurred, with the rise of a new field of medicine—genomic medicine (Guttmacher and Collins, 2002). One of its chief notions is the genetic conception of disease (Hall, 2005). This conception involves the explanation of disease in terms of mutation in or absence of a gene(s), especially in terms of its products being either defective or missing. "One of the opportunities provided by modern genetic techniques," according to John Bell, "is that it should be possible to clarify the pathogenic basis of many of these disorders, and thereby more clearly define most diseases by mechanism" (1997, p. 1052). Genetic diseases are usually the result of loss of function such as in diabetes; however, there are situations in which it leads to gain of function such as in cancer. Gene mutation may be either sporadic, i.e. the result of changes in the genome of patients' somatic cells during their lifetimes, or hereditary, i.e. inherited from one or both of the patient's parents.

If a single defective gene is responsible and if inherited, then it is a Mendelian disease and follows Mendelian inheritance patterns. These patterns include autosomal dominant or recessive, X-linked dominant or recessive, and Y-linked. There are roughly 5,000 Mendelian traits in humans, with hundreds of Mendelian diseases (McKusick, 1998). The classic Mendelian disease, and the first disease described as "molecular," is sickle cell anemia (Feldman and Tauber, 1997). Sickle cell anemia is due to defective hemoglobin in erythrocytes (Stuart and Nagel, 2004). In 1956, Vernon Ingram and J. Hunt demonstrated that sickle hemoglobin's sequence contains a valine in place of normal hemoglobin's glutamic acid (Ingram, 2004).

If there is more than one gene involved then it is a non-Mendelian or polygenetic disease (Williamson, 1988). Most polygenetic diseases are also multifactorial in that the environment plays a critical role in the disease's expression. In other words, part of the disease's origins may be due to inheritance while the remainder may be the result of environmental factors. Thus, many common diseases, such as cancer, diabetes, hypertension, and atherosclerosis, involve the interaction between the genes and the environment. The inherited genes predispose a patient to a given disease but are only expressed under certain environmental conditions. For example, lung cancer has a familial component that can be realized by cigarette smoking (Kiyohara et al., 2002).

Cancer is a prime example of a polygenetic or multifactorial disease. A combination of oncogene activation and tumor suppressor gene inactivation is required for tumorigenesis. However, Robert Weinberg, from the Whitehead Institute at MIT, and Douglas Hanahan, from the University of California at San Francisco, after reviewing the current literature concerning carcinogenesis, proposed a new paradigm to guide research in the twenty-first century. Rather than explaining cancer with just a few mutated genes, they argued that it is a complex and multifaceted disease that exhibits at least six different "hallmarks" (Hanahan and Weinberg, 2000). These include self-sufficiency in growth signals, insensitivity to antigrowth or growth-inhibitory signals, tissue invasion and metastasis, limitless replicative potential, sustained angiogenesis, and evading apoptosis or programmed cell death. Hanahan and Weinberg (2000) advocate a heterotypic cell biology, in which cancer cells recruit normal cells to form a mature tumor. Recently, defects in the extracellular matrix have also been proposed as etiological factors in carcinogenesis (Marcum, 2005c).

Finally, a class of genetic diseases that represent mutations to genes located on the circular pieces of DNA in mitochondria has been investigated intensely over the past decade (Taylor and Turnbull, 2005). Mitochondria are organelles found in eukaryotic cells that are responsible for aerobic respiration or oxidative phosphorylation. They are maternal in origin, since paternal mitochondria are destroyed during fertilization. The inheritance of mitochondrial genes exhibits a non-Mendelian pattern. The mitochondrial genes encode for over a dozen proteins and associated RNA machinery involved in cellular respiration. Mitochondrial diseases include a form of dementia called MELAS, which stands for mitochondrial encephalopathy, lactic acidosis, and stroke-like episodes, and a form of epilepsy called MERRF, which stands for myoclonus epilepsy with ragged red fibers. In addition, the eye disease, Leber's hereditary optic atrophy, results from mutations to mitochondrial genes, which is also the case for Pearson's syndrome—an inherited bone marrow failure syndrome. Although progress is being made with respect to understanding mitochondrial diseases, there are few if any therapeutic modalities to treat them.

4.1.2 Illness

Humanistic or humane practitioners reject the abstract notion of disease for a concrete notion of illness. For example, Cassell (1991) points out two problems with biomedical conceptions of disease. The first is that biomedical practitioners look at each disease as the result of a single, unique cause. Although infectious diseases are often the result of a single microorganism, however, many diseases—such as cancer and heart disease—have multiple causes. There is certainly no single cause that is responsible for many chronic diseases. In addition, the etiology of many diseases is embedded in a society's cultural fabric. According to Cassell, illness cannot "be completely understood apart from personal lifestyle and the social setting in which it occurred" (1991, p. 14). For example, the sharp rise in lung cancer after the First and Second World Wars reflected the socially accepted practice of a previous generation's habit of cigarette smoking.

The second problem, according to Cassell, is that function, for the biomedical model, is simply a result of structure, such that a change in function or a dysfunction reflects a change in structure. The issue is that structure is an artificial construct or a moment in time, while illness is dynamic in which the pathophysiology unfolds over time.

Cassell (1991) contrasts the ontological view of disease with a physiological or process-oriented view and claims that there is no adequate system for understanding the nature of disease. He goes on to challenge the reader: "I think you will be unable to come up with any definition that is not so vague as to be useless as a practical guide to action" (1991, p. 92). Kenneth Boyd (2000) agrees that notions such as disease and illness are ambiguous but contends that this is because they are based on values. Lester King (1954) also agrees that the nature of disease is imprecise, although he contends that the imprecision is based on the fact that disease conditions generally follow a range. For example, what constitutes the normal blood hemoglobin is not a precise number but rather a range.[3]

According to King, disease is a purely artificial notion. What makes something a disease is not only the biology but also our social values: "Disease is the aggregate of those conditions which, judged by the prevailing culture, are deemed painful, or disabling, and which, at the same time, deviate from either the statistical norm or from some idealized status" (King, 1954, p. 197). Ultimately, diseases are not "*things* in the same sense as rocks, or trees, or rivers. Diseases represent patterns or relationships" (King, 1954, p. 199). Of course, this position raises the ontological issue of a pattern's or a relationship's reality, which King resolves by embedding it within a cognitive framework.

George Agich also rejects a value-neutral theory of disease, especially Boorse's functional theory of disease. Agich claims that freedom is the main value by which to evaluate the notion of disease: "Underlying all criteria of disease is the view that what is proper to human beings is bound up with freedom or rational free agency since pain, deformity and dysfunction of various kinds all restrict the individual's capacity to act. The reference to freedom" he continues, "has an interesting and important implication in connection with the problem of disease language, for it implies that *many goals* are possible not simply those typical at any given time" (1983, p. 37). The possibility of these goals is not strictly biological but also social.

Agich next applies the value of freedom as a hermeneutical principle to interpreting Boorse's theory: "On Boorse's view, 'disease' is a description of a deficiency in typical species functions where 'function' means 'a standard causal contribution to a goal actually pursued by the organism'; my suggestion is that if the phrase 'goals actually pursued by the organism' is understood in social terms and in terms of freedom rather than biologically (since medicine concerns *human* disease), then the breadth of possibilities regarding disease as well as the value-laden character of disease judgments will become apparent" (1983, p. 37). Agich concludes that Boorse's theory is too simple and fails to capture the complexity of disease and its personal and social dimensions.

Caroline Whitbeck also subscribes to a value-laden notion of disease and bases her notion on psycho-physiological processes. To that end she defines disease, in general terms, as "an instance of the *sort* of psycho-physiological process that people *wish to be able* to prevent or terminate" (Whitbeck, 1978, p. 211). Moreover, this notion of disease is relative to a cultural context, with respect to what people want and expect to be able to do. "Thus," concludes Whitbeck, "the judgment as to

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[3] King claims "that trying to be too precise is actually misleading, inaccurate, stultifying to thought, and philosophically very unsound" (1954, p. 195).

what types of processes constitute a disease depends on a value judgment of the societal group, *rather than* upon either the judgment of the person afflicted, or simply upon the judgment of the professional whom the society has charged with developing and applying preventive and therapeutic measures" (1978, p. 211). Finally, she cites with approval Mervyn Susser's distinction between disease as organic or mental dysfunction and illness as the subjective or conscious awareness of the dysfunction. What makes the awareness possible are the social values that dictate appropriate behavior.

In addition, K.W.M. Fulford (1989) proposes a value-laden notion of disease, since conceptually medicine is fundamentally evaluative and not factual in nature. Fulford contrasts a "reverse" view of the relationship between disease and illness with the "conventional" view. In the latter view, a value-free concept of disease is primary to a value-laden notion of illness, of which it is a subclass. In the reverse view, illness is primary to disease. "In medicine," argues Fulford, "just as illness—the patient's direct experience of something wrong—normally precedes a clinical diagnosis of *what* is wrong in terms of particular diseases, so, in the logic of medicine it is 'illness' which comes first" (1989, pp. 262–263).

What makes illness logically prior to disease, according to Fulford, is that the former is based on the notion of action failure, while the latter is based on a notion of dysfunction. Action failure involves an inability of persons to carry out their "intentional doings." For example, Fulford claims that delusions are not cognitive dysfunctions in which the patient believes what is factually false but that delusions result from an inability of the patient to provide satisfactory justification for an action.

Finally, the phenomenological model of the body has important implications for the patient's experience of illness. Illness is not so much the dysfunction of a mechanized body or body part within a machine-world, as it is the disruption of an embodied subject's lifeworld: "illness must be understood not simply as the physical dysfunction of the mechanistic, biological body but as the disorder of body, self and world (of one's being-in-the-world)" (Toombs, 1993, p. 81). Illness, then, results in an awareness of the body as separate and foreign that stands out over and against (ek-stasis) the normal course of life.[4]

No longer, claim phenomenologists, does the suffering patient go about everyday life without conscious awareness of the body's constraints and limitations. That constrained body, in terms of its spatial and temporal dimensions, imposes itself upon a patient who is ill. Illness often expands the temporal scale and collapses the spatial domain in which the sick body is lived (Toombs, 1993). For example, a routine activity, such as combing one's hair, which normally takes little time, takes much longer, when an arm is broken.

As a broken tool thwarts the builder's plans so to the ill body disrupts the patient's plans. This is not to say that the body is a tool in a strict sense and that the ill body consequently is a broken tool, but the analogy of the ill body as a broken

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[4] See Leder (1990, pp. 11–35), for additional discussion on the "ecstatic body."

tool does capture the impact illness has on the patient's experience of the body: "it would be wrong to call the body parts tools since they are also part of *Dasein* as self. They are not only a part of the totality of tools, but also, as lived (*leibliche*), they belong to the projective power of the self" (Svenaeus, 2000, p. 109).[5] The objectification of the phenomenological body, however, differs from the objectification of the biomechanical body. In the former the patient is an object but one that is situated in a unique lifeworld as an embodied subject, while in the latter the patient is an object located in a common machine-world as a disembodied person.

4.2 Health or Wellbeing

Part of the problem with the biomedical model's definition of disease and health is that medicine is more often a practical rather than a theoretical discipline: "medicine and its concepts of 'disease' and 'health' are bound up with medical practice and the interests of doctors and patients as well as with advances in science" (Brown, 1985, p. 326). Humanistic or humane practitioners criticize the biomedical model because it brackets the patient's existential concerns associated with the illness experience, which are often critical for a patient's recovery. "Illness," according to Marinker, "is a feeling, an experience of unhealthy which is entirely personal, interior to the person of the patient" (1975, p. 82).[6] Illness then is a more expansive concept than disease, in that the patient may not present with the symptoms of a disease but still be ill.

So too health is not simply a default state with respect to a disease state, for humanistic or humane practitioners. Rather, it is defined in positive terms of wellbeing. Finally, the interests and values of the patient and the physician are critical for defining health as wellbeing, just as they were needed to define illness by humane practitioners. In the remainder of this section, the biomedical notion of health is discussed followed by an examination of the humanistic notion of wellbeing.

4.2.1 Health

Biomedical practitioners often explicate the notion of health in negative terms as the absence of disease, in terms of either the expression of the disease entity or the conditions of the diseased state. This negative definition of health is evident in many

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[5] "Heidegger uses *Dasein*," notes Inwood, "to refer both to the (concrete) human being and to its (abstract) being human" (1997, p. 123).

[6] Marinker also distinguishes sickness from disease and illness: "Sickness is a social role, a status, a negotiated position in the world, a bargain struck between the person henceforward called 'sick', and a society which is prepared to recognize and sustain him" (1975, p. 83).

medical dictionaries. For example, in the twenty-sixth edition of *Stedman's Medical Dictionary*, the first definition of health reads: "The state of the organism when it functions without evidence of disease or abnormality" (Stedman, 1995, p. 764).

Stedman's dictionary and other medical dictionaries also include mental health as part of their overall definition of health. For example, the thirty-seventh edition of *Black's Medical Dictionary* claims that "good health may be defined as the attainment and maintenance of the highest state of mental and bodily vigor of which any given individual is capable" (Macpherson, 1992, p. 265). Moreover, even mental health is reducible in terms of material, physical entities and conditions and is explicated in terms of the absence of mental disease. Thus, the notion of health—whether physical or mental—is defined traditionally and predominantly as the absence of a disease—a material state—and thus represents a default state.

Boorse distinguishes between two notions of health. The first is a theoretical notion, in traditional terms, as the absence of disease. He develops this traditional notion with respect to the notion that disease is sub par functioning *vis-à-vis* optimal species design: "health is normal functioning, where the normality is statistical and the functions biological" (Boorse, 1977, p. 542). The theoretical notion is a value-free concept, because it is based on biological facts.[7] The second notion of health is practical and is defined as "roughly the absence of any treatable illness" (1977, p. 542). This notion is not as ideal as the theoretical notion and is therefore inadequate for developing a robust conception of health.[8]

Boorse develops his functional account of health based on the Aristotelian notion of teleology and the modern notion of goal-directedness. The intuition he uses to frame this account is that "the normal is the natural" (1977, p. 554). Importantly, health is not based on personal or social values and therefore is not a normative concept. To that end, Boorse defines health accordingly: "*Health* in a member of the reference class is *normal functional ability*: the readiness of each internal part to perform all its normal functions on typical occasions with at least

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[7] Although Boorse (1987) considers health a value-free concept in terms of "core" medicine, he concedes that social values play an important role in "peripheral" medicine—such as cosmetic surgery.

[8] Boorse (1977) also makes a distinction between intrinsic and instrumental health. Intrinsic health refers to a state inherent to the general condition of the organism, while instrumental health refers to that secured by the organism's behavior—particularly the notion of positive health. Boorse (1977) identifies two notions of positive health, which envision health as more than the absence of disease. Examples of the first notion are prevention of disease and health maintenance. Boorse argues, however, that the shift from cure to prevention or maintenance is a shift from an intrinsic to an instrumental notion of health and does not differ fundamentally from health as absence of disease, since what is prevented is a disease or what is maintained is the absence of disease. According to a second notion of positive health, "physicians and mental health workers should actively aid individuals, or communities, in maximizing their quality of life and developing their full human potential" (Boorse, 1977, p. 568). For Boorse, this notion is a genuinely positive notion of health since it entails an enhancement of function or "functional excellence," which the medical community does not necessarily discover but does advocate.

typical efficiency" (1977, p. 555). The reference class again refers to the species, while function refers to contributing to a goal. Health is a species related notion in that it is an ability of species members to conform to species design: "We have supposed that the basic notion is 'X is a healthy Y'—that it is by comparing X with its reference class Y that one distinguished the way X does function from the way it ought to" (Boorse, 1977, p. 562). It then is the absence of disease, which is the inability to conform to such design.

For Boorse health is the organism's normal functioning, especially in terms of its physiology or the function of its parts. He further develops his notion of health in terms of "grades of health." The base upon which these grades are founded is the distinction between being dead or alive. From there he makes further distinctions between well and ill, therapeutically abnormal and normal, diagnostically abnormal and normal, pathological and theoretically normal, and finally suboptimal and positive health. Positive health he now defines as "superhealth beyond the already utopian goal of complete normality" (Boorse, 1987, p. 366). Such health would be one to two standard deviations from the normal, as the right-hand tail of a distribution graph for the efficiency of a part's function. However, health is normal functioning *vis-à-vis* species design and, therefore, the definition of health as the absence of disease is a truism.

4.2.2 Wellbeing

Wellbeing is the normative conception of health and reflects the values of a particular culture and, therefore, includes the peripheral dimensions of medical practice (Boorse, 1987). For example, cosmetic surgery may not be required for maintenance of a part's efficient functioning but may reflect social values of beauty that enhance the overall wellbeing of a person. Engelhardt also defines health as a normative concept but distinguishes it from a moral sense of right and wrong: "Though health is good, and though it may be morally praiseworthy to try to be healthy and to advance the health of others, still, all things being equal, it is a misfortune, not a misdeed, to lack health" (1975, p. 125). Thus, health or wellbeing is a metaphysical notion, such as beauty or goodness and not necessarily a moral or factual state of being. One does not blame another for loss of good health but sympathizes with him or her for the misfortune. The notion of health is also descriptive, according to Engelhardt, and it is this dual nature of health as normative and descriptive that often results in ambiguous definitions of health and wellbeing.

The World Health Organization provides the standard and oft-quoted definition of health, in terms of wellbeing: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (1948, p. 35). Engelhardt (1975), however, finds this definition of health or wellbeing problematic because of its ambiguity. The issue is how to define the norms that constitute a person's wellbeing. Moreover, the term "complete" is also problematic: "if health is a state of complete physical, mental and social well-being, can anyone ever be healthy?" (Engelhardt, 1975, p. 126). Ultimately, health is "a regulative ideal of autonomy directing the physician to the patient as person, the sufferer of illness, and the reason for all the concern and activity" (Engelhardt, 1977, p. 139).

The ambiguous nature of health—especially in terms of wellbeing—is to be expected, since health depends upon our values of what constitutes wellbeing (King, 1954). For King, health is "the state of well-being conforming to the ideals of the culture, or to the statistical norm" (1954, p. 197). Since wellbeing is a value judgment, besides being a biological state, it is only partly derived from the statistical norm. Thus, the correspondence between health and wellbeing is not one to one: "The sense of well-being frequently correlates with what we mean by health, but the correlation is not high. Certainly a sense of well-being does not preclude the presence of disease, while the absence of such subjective feelings does not indicate disease" (King, 1954, p. 196).

Whitbeck also subscribes to a notion of health as value-laden and as positive in terms of a person's wellbeing: "health, rather being something that happens or fails to happen to a person in the way that diseases and injuries do, is the ability to act or participate autonomously and effectively in a wide range of activities" (1981, p. 616). This ability to act, however, involves more than functional capacities but also involves the integration of intentional capabilities to attain the goals and interests of the individual person. There are then several components that make up Whitbeck's notion of health or wellbeing. The first is the physical fitness of the functional capacities, especially in terms of avoiding disease. The second is wholeness, in which intentional capabilities are integrated with physical fitness. The final two components include "having a generally realistic view of situations, and having the ability to discharge negative feelings" (Whitbeck, 1981, p. 620).

Carol Ryff and Burton Singer (1998a) champion a notion of wellbeing in terms of positive health. They base their notion on three principles. The first is that positive health is fundamentally a philosophical and not a medical issue. To that end, they examine "the goods" required for living a healthful life. The next principle is that the mind and body are intimately connected and influence each other, especially in terms of health and wellbeing. The final principle is that "positive human health is best constructed as a multidimensional dynamic process rather than a discrete end state. That is, human well-being is ultimately," Ryff and Singer conclude, "an issue of engagement in living, involving expression of a broad range of human potentialities: intellectual, social, emotional, and physical" (1998a, p. 2).

Ryff and Singer (1998b) also identify four essential features of positive human health: "(a) leading a life of purpose, embodied by projects and pursuits that give dignity and meaning to daily existence, and allow for the realization of one's potential; (b) having quality connection to others, such as having warm, trusting, and loving interpersonal relations and a sense of belongingness; (c) possessing self-regard, characterized by such qualities as self-acceptance and self-respect; and (d) experiencing mastery, such as feelings of efficiency and control" (1998b, p. 69).

Finally, Lennart Nordenfelt (1993, 1995) proposes a notion of health in contrast to Boorse's notion, which he calls "the welfare theory of health." He establishes the notion on action theory, in which a person's health is defined in terms of an ability to achieve specific goals that are tantamount to good health. These goals include "the vital goals of man" and they are not reducible to a person's basic needs or to specific personal goals. Rather, Nordenfelt defines a vital goal as "a state of affairs that is necessary for the realization of this person's state of minimal long-term happiness" (1995, p. 213). Happiness is not a singular concept that pertains just to a person's emotional state but is a multifaceted one that also includes the intention and object of those emotions.

Nordenfelt then defines the welfare notion of health in terms of a person's vital goals *vis-à-vis* happiness: "*A* is completely healthy, if and only if *A* is in a bodily and mental state which is such that *A* is able to realize all his or her *vital* goals, given accepted circumstances" (1995, p. 212). Health is an evaluative notion or an "ideological judgment" that depends on a person's notion or judgment of what constitutes a healthful, happy life. However, the welfare notion of health is not relative, since the "accepted circumstances" do not reflect only a person's judgment but also include social judgment as well. "It is a challenge to health care and to traditional medical education in general," according to Nordenfelt, "to incorporate insights about existential states and their role as determinants and constituents of health" (1993, p. 284).

4.3 Summary

The nature of disease and health or of illness and wellbeing depends on the metaphysical position ascribed to by the medical practitioner and, often by default, by the patient. If the patient is a body-machine made up of or reducible to various parts, then disease is an entity or a condition that results from a malfunctioning body part and thereby hinders the efficient running of the body-machine. Health is the absence of any such malfunctioning, although once a year the body-machine may need a check-up.

However, if the patient is a person, who strives to find meaning in the world, then, besides biological malfunction, the patient experiences the "ev-ill" effects of or the existential angst associated with the "dis-eased" state. Health involves more than the absence of a malfunctioning part or body. It also includes the overall wellbeing of the person.

Finally, it is not surprising that there is a quality-of-care crisis in modern medicine, given its understanding of disease and health. Patients are not simply body-machines but persons with concerns and fears about their physical and mental (and for some spiritual) being-in-the-world. The humanistic or humane notions of illness and wellbeing certainly take into consideration these concerns and fears.

Chapter 5
Diagnosis and Therapeutics

In this chapter, I examine from a metaphysical perspective entities that compose the medical worldviews involved with diagnosis and therapeutics, i.e. the diagnostic and therapeutic "stuff" that makes up the biomedical and humanistic or humane models. For example, knowing the cause of a disease is critical for being able to identify and treat it intelligibly, and forms the rational basis for diagnosis and therapeutics (see Chapters 9 and 10). For the biomedical model because disease is a physical state and the result of mechanistic causation, diagnosis and therapeutics is physical and mechanistic as well. A biomedical practitioner uses physical means by which to gather the clinical data and information necessary to determine a patient's disease state and its cause.

The diagnostic procedure for the biomedical or technomedical model depends upon an outside-in approach (Davis-Floyd and St. John, 1998). The standard outside-in approach is the differential diagnostic method. Through this method, a physician uses the data generated from laboratory tests and physical examinations to eliminate the different hypotheses not causally responsible for a patient's disease state. Once the proper diagnosis is made and the nature of the diseased state determined, the role of a biomedical practitioner is to intervene in the disease process. Just like the diagnostic procedure, this intervention is also often outside-in (Davis-Floyd and St. John, 1998).

This outside-in approach to disease led to a therapeutic revolution in the twentieth century, following on the heel of advances made in understanding and treating infectious disease at the end of the nineteenth century. The revolution, however, was slow in coming during the first half of the twentieth century, and physicians during this time still had little in the way of effective therapeutics to offer patients: "Comfort was what the scientific physician could offer as recently as 1933!" (Golub, 1997, p. 179). Even blood letting was still practiced up to the First World War.

After the Second World War, however, the technological revolution in medicine took off at a staggering pace with the successful development of vaccines, antibiotics, and other pharmaceutical drugs, including designer drugs and surgical procedures and their associated technology. Comparing the revolution to the technical feats of the space program, James Le Fanu claims that "the post-war therapeutic revolution was the most momentous of all, a multitude of discoveries in diverse scientific

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

disciplines stretching over a period of three decades" (2002, pp. 159–160). The twentieth century culminated in the genetic revolution, especially with the introduction of gene therapy (Clark, 1997; Marcum, 2005b).

Although the biomedical model sponsored these "miracles" of modern medicine, many patients today are dissatisfied with the quality-of-care provided by biomedical practitioners and their outside-in approach. Commenting on the limitation of this approach, Davis-Floyd and St. John claim that "it renders invisible the personality and the experiences of the patient who must live and perhaps die with the disease" (1998, p. 28). Humanistic or humane practitioners certainly avail themselves to the technological advances made in diagnostic and therapeutic procedures; but, they attempt to instill a human touch into medical practice. Moreover, since disease causation is more than simply mechanistic causation—rather it is multifactorial and must include the patient's lifestyle—therapeutics is more than simply intervening in the physical causes responsible for a disease state or an illness experience. Rather, healing, which is meant to reinstate a patient's wholeness, must include lifestyle factors. It must involve more than external intervention.

Humanistic or humane practitioners add to biomedicine's outside-in approach an inside-out approach (Davis-Floyd and St. John, 1998). According to this approach, given the patient's attunement to changes within the body the role of the physician is to obtain, especially through patient-physician communication, the needed information for making a more accurate and holistic diagnosis. "The physician-patient communication [that the humanistic model] emphasizes allows the physician to elicit information from deep within the patient and combine it with objective findings" (Davis-Floyd and St. John, 1998, p. 97). Finally, the body is often able to heal itself such that the humanistic or humane physician rather than simply imposing a therapeutic modality is to assist the natural ability of the body to heal itself.

5.1 Diagnosis

Medical diagnosis is the means by which physicians and other healthcare professions determine a patient's disease state, and it represents an important component of modern medicine's worldview and metaphysics. Advances in technology, especially imaging technology, certainly enhance the ability of physicians and medical technicians to gaze into the interior of the patient's body in order to determine with accuracy its disease state. These techniques range from the low tech and noninvasive to the high tech and invasive and include technical devices, from stethoscopes to MRI scanners. The biomedical model depends upon two broad means for determining the patient's disease state: the medical interview and the physical examination, which generally includes follow up laboratory tests and procedures. In this section, the metaphysics of the cognitive and technical devices developed to aid biomedical practitioners in diagnosis are examined, in terms of the medical interview, physical examination, and laboratory tests and procedures. I then discuss the humanization of these diagnostic procedures.

5.1.1 Medical Interview

People seek a physician because they know something is physically or mentally wrong with them (Black, 1968). In order to determine a patient's problem, the physician asks the patient a series of questions. This process is known as the medical interview (Aldrich, 1999; Cole and Bird, 2000; Coulehan and Block, 2001). Although the medical interview predates the twentieth century, it was not until Felix Deutch and William Murphy published *The Clinical Interview* in 1954, that it became a subject for systematic analysis (Billings and Stoeckle, 1999). Moreover, pedagogical texts began to appear that addressed the steps associated with an effective medical interview. The purpose of the interview for the biomedical practitioner is to collect all the relevant and objective information and data concerning the patient's disease. The questions range from information concerning the patient's present illness and past medical history to the patient's social situation and personal habits.

The medical interview forms the initial component of the patient's medical record, which is "a repository of the information collected about patients, of how the data were interpreted, and of what medical acts were carried out" (Billings and Stoeckle, 1999, p. 271). In other words, a medical record is a comprehensive documentation of a patient's health history and medical care. In the early 1970s, Lawrence Weed (1971) introduced a problem-oriented medical record to structure record keeping. According to this approach, a patient's medical problems are enumerated on a list that provides the information on the actions taken or on those that are planned, in terms of assessing the problem and of developing therapeutic protocols. Besides the list of problems, a medical record also includes a list of the medications administered to the patient. The medical record is a confidential chronicle that aids those in patient care and must be respected as such (Siegler, 1982).

5.1.1.1 Technique

The technique for conducting the medical interview varies but includes a number of essential elements, including the initial or chief complaint, history of present illness, past medical history, family history, social history, and review of the symptoms (Greenberger and Hinthorn, 1993). The chief complaint is technically called the "presenting symptom." When conducting the medical interview, or medical history as it was known previously, the physician should "begin the history with a detailed analysis of the presenting symptom, for this is the thing in which the patient is most interested, the thing which has made him take the trouble to consult his doctor" (Black, 1968, p. 31).

Symptoms are the subjective description of the disease as experienced by the patient, such as depression, dizziness, fatigue, pain, or shortness of breath. The description of symptoms are important, since they assist the physician in forming initial diagnostic hypotheses, i.e. they "are the experiences that suggest disease or physical dysfunction" (Greenberger and Hinthorn, 1993, p. 3). Finally, the physician must be cautious when there is more than one initial complaint since there may be more than one disease.

After establishing the presenting symptom, the next part of the medical history consists of the present illness history. "The [history of the] **present illness**," according to Coulehan and Block, "is a thorough elaboration of the chief complaint and other current symptoms starting from the time the patient last felt well until the present" (2001, p. 45). Whereas the first part of the medical history depends upon the patient's voluntary information, the present illness history depends upon the questions the physician asks the patient concerning the present illness. Of course, the questions the physician asks depend on the patient's initial description of the presenting symptom. The general strategy is to begin with open-ended questions and move to more specific questions. For example, the physician may seek general descriptive information about the chief complaint and then focus on its specific details in terms of location, time of onset, or intensity. The purpose is to obtain information about additional symptoms not mentioned with the presenting symptom.

In the next component of the medical interview, the physician continues to gather information and data on a patient's present illness by examining the patient's previous medical problems and diseases. This component is known as the past medical history. "The past medical history," according to Steven Cole and Julian Bird, "is the record of the patient's past experiences with illnesses and medical treatments" (1991, p. 87). Here the physician asks specific questions about the patient's previous medical problems that are germane to the present illness. This part of the medical interview should be comprehensive and sufficiently detailed to assist the physician to begin the process of forming a valid differential diagnosis. The topics that make up the past medical history include previous hospitalizations, operations, injuries, serious physical and mental illnesses, allergies, past and current medications and any allergic reactions to them, immunizations, pregnancies, dietary constraints, exercise, and sleeping patterns. As in the history of the present illness, the strategy is to begin with open-ended questions and then to focus on specific questions when needed.

The family history constitutes the next section of the medical interview, in which the physician inquires about blood or genetic relatives and their "illnesses, state of health or cause of death, age, where they live, and who they depend on for support" (Greenberger and Hinthorn, 1993, p. 13). The illnesses of special concern are hereditary diseases. Although classical Mendelian diseases are uncommon, there are many diseases that have a genetic basis such as cancer, heart disease, depression, epilepsy, and type II diabetes. The family history is important for providing trends of these genetic diseases within a family in order to access the risk of the disease for the individual patient. To that end, a family tree is constructed. Certain diseases such as breast cancer and coronary heart disease have genetic markers such as BRCA I and II or high serum cholesterol, respectively, that permit prophylactic surgery and dietary restrictions to prevent the disease's occurrence.

The penultimate step in the medical interview is the social history, in which the physician asks questions about the patient's personal history or biography and habits, employment, and sexual activity and orientation. The patient's personal history includes place of birth, life-style choices, family background, education, leisure activity, residence, and religious beliefs, which are important factors in terms of diagnosing and treating a disease. For example, Jehovah Witnesses do not permit blood transfusion. Personal habits, such as smoking, alcohol consumption, and non-prescription or illicit drug use, are important risk factors for certain diseases. Cigarette smoking, for example, is a risk factor for a number of diseases including heart disease and lung cancer. Moreover, since denial or distortion of certain habits such as alcohol consumption is common, special interviewing techniques are available to obtain the requisite information. Employment is also important in determining possible environmental carcinogens or toxins the patient may be exposed to, such as asbestos. Another serious risk factor associated with many occupations is stress. Sexual activity and orientation are important for determining the risk of sexually transmitted diseases, such as syphilis and gonorrhea.

The final step in the medical interview is the review of systems, in which the physician asks questions systematically about each part of the body to compile an inventory of symptoms. "The purpose of this inventory," according to Billings and Stoeckle, "is to screen for disease processes that have not as yet been discovered in the history. A systematic and thorough review, organized to scan for common complaints referable to each system of the body," they claim, "will jog the patient's memory about symptoms and diseases that have not already been mentioned, and will remind the interviewer about topics that may have been overlooked" (1999, p. 57). The questions generally begin with the skin and then proceed to the head and downwards, inquiring about symptoms for each of the major organs and organ systems. Although this step is considered as the last one pedagogically, it is generally conducted during other parts of the medical interview or during the physical examination. Through this step the physician hopefully compiles a complete and comprehensive medical picture of the patient.

5.1.1.2 Humanistic Modifications

Of course, humanistic or humane practitioners also rely upon the medical interview but modify it to address issues concerning the illness experience other than a patient's somatic condition(s). "The medical interview," according to Knight Aldrich, "is the procedure through which the doctor, while establishing a relationship with the patient and enlisting the patient's collaboration in treatment, seeks to understand the patient's *illness* as the first step in making a diagnosis of *disease*" (1999, p. 1). The modifications include asking questions about existential and emotional issues concerning the patient's medical history. For example, Cassell claims that biomedical practitioners are not necessarily interested in why the patient suffers but in what causes the patient's disease: "It is frequently troubling to patients to discover that most doctors are not primarily interested in finding out what is the matter with them but are concerned instead with discovering what disease is the source of their illness" (1991, p. 95).

The place to allay the existential and emotional concerns of the patient is in taking the medical history. Through interviewing the patient, the physician can address these concerns, which are often the source of the patient's suffering. The goal of the medical interview for the humane practitioner is more expansive than that for the biomedical practitioner: "to understand the patient's view of the illness and its significance, and to understand the patients…as people whose psychological, sociological, cultural, developmental, and personality characteristics have influenced their illnesses and their responses to illness, to disease, and to medical care" (Aldrich, 1993, p. 23).[1]

In *Talking with Patients* Cassell (1985) asserts that a physician obtains, through the standard medical history, only a portion of the information concerning the patient's illness experience. He adds three additional sections, which he calls the "personal history," in order to acquire a more comprehensive account of the illness and its meaning and impact on the patient's daily life. In the first section, the physician inquires about "the kind of person the patient is, along with how he or she behaves, interacts with the pathophysiology to produce this specific illness" (1985, p. 85). The next section involves personal, familial, social, and cultural factors associated with the patient's illness experience. The final section is concerned with how the patient interprets the illness experience, especially the expectations the patient has for healing. The stance of a physician should be to place herself within the shoes of a patient: "We should constantly be asking ourselves how we would have thought, felt, reacted, or acted if such an event had happened to us" (Cassell, 1985, p. 109).

Finally, Tauber (2005) recommends the addition of an ethics section to the medical interview and record, which would address the ethical issues of the patient's illness. As he points out the current medical record, which dates to the 1960s, reflects the scientific emphasis of medical care. By adding an ethics section, the healthcare team is given an opportunity to tackle the ethical concerns for that particular patient before they become problematic. However, the more important benefit is to help the physician realize that at root the medical profession is a moral enterprise that requires physicians to reflect on the ethical and moral implications of their actions

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[1] For Cole and Bird (2000), the chief function of the medical interview for traditional medical practitioners is to gather the objective information concerning the patient's chief complaint. They developed a "three function" approach to the medical interview, in which one of the functions is to evaluate the patient's emotions in terms of the illness experience. Knight Aldrich (1993) also claims that the medical interview should be structured to help the patient deal with the emotions associated with the patient's losses in life. He gives the example of an elderly female patient who gave up independent living because she could no longer keep a flower garden. During a "sensitive" interview the patient began to cry and the physician could not think of a consoling comment. Aldrich claims that the physician's silence was probably better than a trite reassuring comment that all would be well. But he also claims that an "empathic" comment, such as recognizing that by having to live in a nursing home meant that the patient gave up not just a flower garden but also independent living, would have helped the patient to grieve the loss of both the flower garden and independent living and to move onto the next phase of life.

with patients: “clinical medicine is governed by its ethics, and when mentors and students better recognize the complex moral reality in which they live, the more likely their craft will be transformed from its technocratic and bureaucratic obsessions to a more humanized life form” (Tauber, 2005, p. 239).

5.1.2 Physical Examination and Laboratory Tests

Once the medical interview is complete the physician then conducts, if necessary, a physical or clinical examination. It is the procedure in which a physician physically examines the patient for signs of disease (Greenberger and Hinthorn, 1993; Kassirer and Kopelman, 1991b). The exam usually begins with the head, moves to the torso, and concludes with the extremities. The physical examination involves a variety of techniques to access the organ systems, including inspection, palpation, percussion and auscultation. The information obtained from the examination includes the patient’s basic vital signs, including body temperature, respiratory rate, and blood pressure, general biometrical data, such as the patient’s weight and height, and the general condition of each of the organ systems. Besides the general examination, especially for asymptomatic persons usually undergoing an annual check-up, each specialty has its own specific examination for symptomatic patients, which allows the specialist to determine the exact nature of the disease for the pertinent organ system, such as the circulatory, neural, or respiratory system.

Whereas symptoms are the expressions from the patient’s subjective experience of the disease, clinical signs are the objective expression of the disease, which the physician observes upon examining the patient (Cole and Bird, 2000; Coulehan and Block, 1992). Signs are often the result of diagnostic intervention and may include a lump discovered on the liver though palpation or a heart murmur through auscultation. Many signs are named after physicians who first described them, such as Boston’s or Graefe’s sign in which the eye protrudes from the socket and is indicative Graves-Basedow disease, a form of hyperthyroidism.

Advances in laboratory tests and procedures over the last several decades are simply staggering. These advances include, for example, a host of imaging devices such as ultrasound and magnetic resonance imaging, as well as scanning devices such as computerized (axial) tomography and proton emission tomography (Konofagou, 2004; McGoron and Franquiz, 2004). Besides high-tech machines, there is also a host of laboratory protocols that can be used to measure a variety of bodily substances, such as cholesterol, creatinine, bilirubin, and serum albumin. Finally, the development of the endoscope has allowed physicians and surgeons to invade the body with minimal damage to the patient (Wang and Triadafilopoulos, 2004). However, magnetic resonance imaging (MRI) probably best illustrates the advances in medical technology.

Raymond Damadian and colleagues performed the first MRI exam of a patient in 1977 (Gore, 2003). Although the results were crude, the development of MRI over the next several decades was astounding. To date, over a dozen Nobel Prizes have been awarded to those involved directly or indirectly in its development (Boesch, 2004). The basic principle upon which MRI works involves the absorption of energy by hydrogen atoms from a radio frequency pulse, within a strong magnetic field (Roberts and Macgowan, 2004). The magnetic field forces the hydrogen atoms into a particular alignment. Once the pulse ends, the coil, through which the pulse was generated, detects a signal from the hydrogen atoms and converts it into a signal that is then transformed into an image. The image depends on the type of tissue and whether it is normal or not. MRI is used to diagnose a variety of disease states, including herniated discs in the spine, tumors and infections in brain and other parts of the body, strokes, and multiple sclerosis. This technology has also been adapted for examining the circulatory system.

An important humanistic modification of laboratory testing is to invite the patient into the process by explaining what the results of the tests mean. Often patients are left dangling in terms of the massive amount of information collected on them and only given the relevant facts that seem just that, facts. When in reality, there exists a lot of uncertainty in the laboratory tests in that the data must be interpreted as facts. By exposing the patient to the interpretative process that is part of the testing procedure, the physician allows the patient to comprehend more fully the diagnostic experience. No longer is the patient just a spectator in the "game" of medicine—as Tauber (2005) calls it—but an active participant. Thus, the patient is empowered with authentic knowledge rather than patronized with facts from on high. Of course, the physician must be sensitive to the patient and not simply present the laboratory data without guidance. After all, the physician undergoes years of training to understand the game of medicine but it is the patient who best understands the illness experience.

5.1.3 Differential Diagnosis

From the clinical evidence gathered from the medical history and the physical exam, including laboratory tests, a physician constructs a differential diagnosis. The exact nature of this diagnosis is ambiguous, since clinicians use it quite differently. For example, Jerome Kassirer and Richard Kopelman (1990) have identified five uses for differential diagnosis. The first is an exhaustive list of possible diseases to account for the clinical evidence. Importantly, the list is not ranked probabilistically. The next use is also a long list of possible diseases for each of the significant clinical datum. The third use is also an exhaustive list but ordered probabilistically. The fourth use is a short list that is supported by a large amount of clinical data.

Finally, a use preferred by Kassirer and Kopelman is "a flexible, ever-changing set of hypotheses driven by probabilistic reasoning, causal reasoning, and concern for the patient's welfare" (1990, p. 27). Although they admit that each use has its advantages, they support their preferred use of evolving set of hypotheses and defend it with a case study demonstrating the development of a differential diagnosis by a clinician examining a patient who was ultimately diagnosed with disseminated histoplasmosis.

5.2 Therapeutics

Medical therapeutics is the means by which physicians and other healthcare professions treat a patient's disease state. Over the last fifty years, advances in therapeutic technology revolutionized medicine and its worldview. These advances include kidney dialysis, cancer chemotherapy, antibiotics, gene therapy, and the heart-lung machine, which made possible one of the most outstanding advances in twentieth century medicine—open heart surgery. In this section, therapeutic advances made possible by biomedical technology are discussed in terms of pharmaceutical drugs, surgical procedures, and gene therapy. In addition, I discuss the notion of the physician as a therapeutic device.

5.2.1 Pharmaceutical Drugs

The rise of the biomedical model certainly depended on the discovery and development of pharmaceutical drugs during the late nineteenth century and the twentieth century. These drugs afforded medicine an ability to treat diseases, especially infectious diseases, which were responsible for the majority of premature deaths. Probably the most miraculous of the drugs were the antibiotics (Hoel and Williams, 1997; Wainwright, 1990). With their discovery and development in the early to mid twentieth century, antibiotics were used to eradicate infectious diseases, like diarrhea and enteritis, pneumonia, and tuberculosis, which plagued western society. Recently, however, a crisis has arisen over the abuse of antibiotics as bacteria became resistant to these medicinals (Casadevall, 1996; Walsh, 2003). Although vaccines are not drugs to treat diseases, they are important for disease prevention (Fletcher et al., 2004; Plotkin, 2005). Finally, "designer" drugs like monoclonal antibodies are part of the future for the pharmaceutical industry (Feig, 2002; Richards, 1994; Rifkind and Rossouw, 1998). In this section, I look at three important drugs, penicillin, insulin, and heparin, to illustrate the advances made in pharmaceutical medicine.

5.2.1.1 Penicillin

One of the first antibiotics to be discovered and developed for clinical use was penicillin (Hoel and Williams, 1997; Lax, 2004). Traditionally Alexander Fleming is credited with penicillin's discovery, although there were others that had observed the *Penicillium* mold's antibiotic effects prior to Fleming (Goldsworthy and McFarlane, 2002). Howard Florey and his assistant Ernst Chain are credited with the isolation and development of penicillin as an antibiotic, although it was the Americans who devised the first commercial protocol of its isolation for clinical use (Brown, 2004).

Chemically penicillin is part of a group of β-lactam antibiotics, with narrow specificity for Gram-positive bacteria (Kucers et al., 1997). It can be modified to broaden its specificity to treat a wide range of bacterial diseases. It functions primarily by inhibiting peptidoglycan cross-linking within the bacterial cell wall, resulting in cell lysis. Penicillin has been used to treat a wide variety of diseases, including syphilis, bacterial endocarditis, septicaemia, pneumonia, and meningitis.

5.2.1.2 Insulin

There are many other important pharmaceutical drugs discovered and developed during the twenty century, including insulin and heparin, which helped to treat deadly disease like diabetes and to develop spectacular surgical procedures like open-heart surgery (Sneader, 2005). The clinical use of insulin resulted in dramatic outcomes for treating diabetes. Leonard Thompson at age fourteen was about to slip into a diabetic comma, when he received one of the first injections of bovine insulin on 23 January 1922 (Bliss, 1984). His blood sugar eventually returned to normal levels and he lived another thirteen years.

Insulin is a pancreatic hormone produced by β-cells in the Islets of Langerhans (Federwisch et al., 2002). It is a protein with a molecular weight of 5,808 Da and was the first protein ever sequenced, by Fred Sanger in 1955. It functions by binding to cell membrane receptors and by increasing the uptake of glucose and glycogen synthesis. The insulin gene is located on chromosome 11p15.5; and cloned human insulin is now used to treat diabetic patients. Gene therapy is on the horizon (Chan et al., 2003).

5.2.1.3 Heparin

Heparin is a blood thinner or anticoagulant discovered in William Howell's laboratory at the Johns Hopkins medical school, during the first half of the twentieth century (Marcum, 1990, 2000). Although Howell attracted the interest of an American drug company, Hynson, Westcott and Dunning, the company did not sufficiently purify it for use in humans. The development of heparin as a drug was due to the work of Charles Best, of insulin fame (Marcum, 1997). Heparin does not directly inhibit blood coagulation but acts as a cofactor, which binds antithrombin III and potentiates its inactivation of clotting factors such as thrombin and factor Xa (Rosenberg et al., 1985).

One of the chief problems with heparin is regulating its *in vivo* activity when injected into patients, i.e. there is a substantial risk of bleeding or hemorrhage. Protamine sulfate is the standard means of regulating the anticoagulant's activity. However, clinicians discovered that the oligosaccharide containing fewer than 18 monosaccharides represents a safer form of the anticoagulant for inhibiting blood coagulation. Several pharmaceutical companies, including Aventis, Novartis, Pfizer, Wyeth-Ayerst, among others, developed preparations of low molecular weight heparin (LMWH). LMWH was aggressively developed clinically and is used today to treat not only blood clotting disorders but also inflammatory and malignant diseases (Messmore et al., 2004).

Howell was certainly interested in the physiological function of heparin and incorporated the inhibitor into his theory of blood coagulation, a theory that dominated an entire generation's understanding of blood coagulation (Marcum, 1992). However, with the rejection of Howell's theory by a subsequent generation the inhibitor's physiological role faded in comparison to its clinical role in managing blood clotting. Moreover, the cells that make heparin, mast cells, are not generally located strategically with respect to the vascular system and heparin is only found in the blood under pathologic conditions. Research during the 1980s demonstrated that another complex carbohydrate, heparin sulfate, that is comparable to heparin is synthesized by vascular endothelial cells and is involved in the regulation of hemostasis (Marcum and Rosenberg, 1991).

5.2.2 Surgical Procedures

The development of surgical procedures and its associated technology was also staggering during the twentieth century and was intimately linked often with the discovery and development of the above pharmaceutical drugs, including surgical procedures such as organ transplants.[2] For example, the development of vascular surgery procedures was not possible until the discovery of a safe and an effective blood anticoagulant or thinner. The discovery and development of heparin made possible not only vascular surgery techniques but also high profile surgical procedures, such as open heart surgery, and its associated technology, such as the heart-lung machine (Bigelow, 1990; Le Fanu, 2002). This case study is used to illustrate the advances made in surgical procedures during the mid twentieth century.

Fallot's tetralogy or the "blue baby" syndrome is a condition in which a hole between the two main chambers of the heart does not close off during development (Bigelow, 1990; Le Fanu, 2002). The result is that that both oxygenated blood (red in color) and deoxygenated blood (blue in color) mingle in the heart and is pumped to the rest of the body, which accounts for the baby's blue appearance. The life expectancy of untreated blue babies is around ten years. In 1944, the Johns Hopkins surgeon Alfred Blalock, along with his associates pediatric cardiologist Helen Taussig and medical scientist Vivien Thomas, developed a surgical procedure, known as the Blalock-Taussig shunt operation, in which a non-essential blood vessel from the patient is used to redirect blood to the lungs. Although the procedure does not cure the patient, the life expectancy and the quality of life are dramatically

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[2] The discovery and development of immunosuppressant drugs such as azathioprine and cyclosporine were critical for the development of surgical procedures for organ transplantation (Le Fanu, 2002).

increased. This procedure was not possible without heparin to regulate blood clotting (Bigelow, 1990).

Heparin was critical for the development of the heart-lung machine and for the development of open-heart surgery (Bigelow, 1990). Again, the anticoagulant keeps blood from clotting within the machine's tubing and in the patient's blood vessels. Beginning in the 1930s the surgeon John Gibbon and his wife Maly (née) Hopkins developed a machine that pumps blood away from the heart to a set of coils that then oxygenate the blood, after which it is returned to the heart. By 1953 Gibbon performed several heart operations but with limited success, only one of the five patients survived. After this failure, he stopped using the heat-lung machine in operations. Others, however, modified the Gibbon heart-lung machine. For example, the Mayo Clinic surgeon John Kirklin convinced the clinic to refine the Gibbon pump. By 1958 he successfully performed open-heart surgery on over 200 patients, which "became a gold standard for cardiac surgical teams" (Bigelow, 1990, p. 164).

5.2.3 Gene Therapy

If genes are the wave of the future for modern medicine, then gene therapy is the approach for treating genetic disease. During the 1990s gene therapy became a recognized professional specialty, with the founding of journals and societies. For example, the first professional journal, *Human Gene Therapy*, was published in 1990 under W. French Anderson's editorship. Today there are around half dozen journals devoted to gene therapy. A few years later, a group of European scientists took the first steps towards founding the European Society of Gene Therapy. Its first international meeting was held in 1993 in Baveno-Stresa. In 1996 the American Society for Gene Therapy was founded, with its first annual meeting held in Seattle a few years later. Other countries have also founded societies for promoting gene therapy.

The types of genetic diseases treated in clinical trials by gene therapy include various forms of cancer, cystic fibrosis, hemophilia, among other diseases (Marcum, 2005b). For example, during the second half of the 1980s Anderson and other researchers succeeded in inserting a gene for adenosine deaminase (ADA) into T cells from patients suffering from severe combined immunodeficiency disease (SCID), commonly known as the "bubble-baby" syndrome. The engineered cells expressed adequate levels of enzyme activity to encourage a try at gene therapy. In September 1990 Anderson and colleagues at the NIH conducted the first Recombinant DNA Advisory Committee (RAC) approved human gene therapy trial, on a young girl suffering from ADA-SCID (Anderson, 1995). A second girl was treated four months later. Although the procedure did not fully cure the girls, it did significantly reduce the amount of the drug PEG-ADA used to treat them.

As the 1990s progressed, investigators received RAC approval for gene therapy protocols and conducted additional studies using animal models to determine the efficacy and safety of gene therapy for human diseases. By mid decade gene therapy clinical trials included patients suffering from over a dozen genetic diseases such as cancer, cystic fibrosis, familial hypercholerolemia, hemophilia, and rheumatoid arthritis. However, towards the end of the decade the first death due directly to gene therapy was reported. A person suffering from brain cancer died a few days after receiving an antivirus drug to attack a brain tumor treated earlier with a genetically engineered virus (Johnston and Baylis, 2004).

In a highly publicized case in 1999, an eighteen year-old boy with a defective gene for ornithine transcarboxylase, an enzyme involved in ammonia catabolism, was given an adenovirus containing the normal gene as part of clinical trails. The teenager died several days later, apparently from a severe allergic reaction to the vector that led to the failure of multiple organs (Lehrman, 1999; Verma, 2000). Although the deaths are tragic and had repercussions for gene therapy trials, the impetus for conducting further trials was not diminished.

At the end of the twentieth century, Alain Fischer and Marina Cavazzana-Calvo, along with colleagues, from the Necker Hospital in Paris treated two baby boys for X-linked SCID (Cavazzana-Calvo et al., 2005). The disease is caused by a defective gene for the γ-chain of the interleukin-2 receptor involved the maturation of T cells and natural killer cells. Importantly, X-linked SCID represents an attractive disease for gene therapy since the bone marrow cells receiving the normal gene would have a growth advantage over those cells with the defective gene. The team infused engineered autologous bone marrow cells containing the normal gene into the two baby boys and within the year their immunological systems were normal. The team then went on to treat almost a dozen baby boys with the procedure, with the majority being cured. However, in 2002, two of the boys developed a rare form of leukemia. Examination of their genomes revealed that the retrovirus had inserted into a gene, *LMO-2*, known to be associated with childhood leukemia. In early 2005, the French team reported yet another boy from its study had developed cancer. In reaction several months later, the FDA suspended several gene therapy trials (Weiss, 2005).

5.2.4 Physician as Therapeutic Agent

According to humanistic or humane practitioners, the physician is a therapeutic instrument or agent in the patient's healing. The role of the physician in the therapeutic process is invaluable: "In acute illness, chronic illness, or terminal illness, the active presence of the physician is a part of the treatment. I believe," Cassell continues, "that it is accurate to put it even more strongly: *The physician is the treatment*" (1991, p. 126). All other elements of therapy are ancillary to the physician *vis-à-vis* the patient's illness. The physician is the guide that helps the patient to negotiate the technology of modern medicine.

According to Cassell, "the *ideal* of scientific knowledge will not work for *this* sick person without the aid of *this* doctor" (1991, p. 133). Moreover, he identifies the source of healing not only within the patient but also within the physician and through the physician's self-control and not through control over the patient: "healing powers consist not only in…those things or forces for getting better (whatever they may be) that already exist in the patient…[but] virtually all a doctor's healing power flows not from control over the patient, but from the doctor's self-mastery" (Cassell, 1991, p. 234).

Cassell justifies the notion of physician as a therapeutic agent by claiming that clinical information, to be optimally therapeutic, must also include the emotional or subjective dimension of the patient's illness experience: "Information about the patient that is being acquired, evaluated, and utilized and which enters into value and aesthetic assessments may also include feelings, body sensations, and even the spiritual (transcendent)" (1991, p. 226). The physician as an authentic person can access this information and knowledge as genuine, only by relying on personal experience.

Rather than tainting objective knowledge, personal information allows the physician to draw compassionately along side the patient's suffering. "Only the physician as a person," according to Cassell, "can empathetically experience the experience of a sick person" (1991, p. 227). This bond of human experience does not make the physician's knowledge subjective, since the physician must learn to manage such knowledge appropriately. This is a skill that cannot be transmitted in a textbook but only in the clinic under the tutelage of a skilled and empathic instructor, who understands the role of the physician as therapeutic agent.

Paul Freeling (1983) provides a striking example of a physician as healing instrument. A female patient was unable to face a certain social situation that was making her ill. Her physician realized she needed to sever a particular social relationship, based on an intimacy between the physician and patient that had developed over years. The physician told her in no uncertain terms to break off the relationship. The patient was grateful to the physician for the advice that she in fact was hoping to hear and complied with the physician's counsel.

Although Freeling recognizes that the physician's actions are certainly open to criticism, he interprets the physician in this situation as a "therapeutic agent." "Nevertheless the case history illustrates the use of the doctor-patient relationship in diagnosis and treatment," he maintains, "the treatment lying in the category of interfering with the mechanisms linking symptom and cause" (Freeling, 1983, p. 171). Indeed, the close relationship between a physician and a patient often places the physician in the position of being a healing instrument.

5.3 Summary

The metaphysics of diagnosis and therapeutics are important for framing medical knowledge and practice. During the twentieth century, a number of diagnostic and therapeutic procedures and technologies were developed to define medical worldviews. Determining the nature of the patient's disease and its cause is important not only for the diagnosis of a disease but also for therapeutic intervention. For the biomedical model, diagnosis is a technique that depends upon obtaining objective evidence of the patient's disease state through both the medical interview and physical examination.

Although diagnostic procedures and technology provide biomedical practitioners with rational means to determine the precise nature of the disease and thereby to make an accurate diagnosis and to prescribe safe and effective pharmaceutical drugs and surgical procedures to cure the patient's disease state, patients are often dissatisfied with the quality-of-care they receive. In response, humanistic or humane practitioners incorporate techniques to obtain information concerning the personal and existential dimensions of the patient's illness experience. Of course, humane practitioners do not shun the diagnostic and therapeutic procedures discovered and developed by the biomedical sciences. Their aim, however, is to reinsert the physician *qua* person as a diagnostic and especially as a therapeutic factor into the modern medical worldview.

Part II
Epistemology

Epistemology is the philosophical discipline concerned with the nature of knowledge, including its sources, acquisition, and justification. Philosophers recognize several types of knowledge (Pojman, 1998). One type is acquaintance knowledge, in which someone is familiar with an object or idea such as a house plan, an organism's anatomy, or even one's own thoughts. The next type is competence knowledge, which "involves an ability to perform a skill and can be done consciously or unconsciously" (Pojman, 1998, p. 130). Driving a car or performing a surgical procedure would be an example of such know-how or practical knowledge. Finally, there is propositional knowledge. This type of knowledge has truth value, and its traditional definition, since the time of the Greeks, is "justified true belief." Although an individual person is the subject who thinks and acts in terms of such knowledge, a community of professionals or lay people is also important for sanctioning it.

In Part II, I examine the epistemological issues associated with the humanization of the biomedical model. To that end, in Chapter 6 I discuss medical thinking, in terms of objective or impersonal and subjective or personal ways of knowing or reasoning. Biomedical practitioners often base medical knowledge on objective means of reasoning or knowing, while humanistic or humane practitioners generally include subjective ways. In the next chapter, clinical judging and decision making are investigated both in terms of the biomedical and the humanistic models. In Chapter 8, I examine the epistemological issue of explanation, especially with respect to how biomedical and humane practitioners account for disease and illness. In the next chapter, the establishment of diagnostic knowledge is discussed in terms of the patient's story of disease and illness through the technical means utilized by biomedical practitioners and through the narrative means utilized by humane practitioners. In the final chapter, I explore the role of medical research and its associated technology in discovering and justifying therapeutic knowledge, with respect to clinical trails. I conclude with a discussion of narrative therapeutics.

Chapter 6
Medical Thinking

How doctors think is an important issue for many healthcare professionals, especially in terms of cognitive mistakes and errors, and is a title of two recent books (Montgomery, 2006; Groopman, 2007). Biomedical practitioners generally subscribe to an objective way of thinking or reasoning that takes science as its example of how best to obtain and substantiate knowledge. Such knowledge is impersonal and has been described as "the view from nowhere" (Nagel, 1989).[1] In other words, this knowledge is applicable and valid for all times and places, regardless of one's particular values or biases or cultural context. Objective thinking brackets the emotions and intuitions, which proponents claim distort our knowledge of the world. "Intuitive thinking, brainstorming, creative option generation, and open-ended questions," for the biomedical practitioner according to Davis-Floyd and St. John, "are usually taboo" (1998, p. 33).

Humanistic or humane practitioners, although recognizing the significance and value of objective knowledge for medical practice, subscribe to a subjective way of thinking and reasoning that includes the intuitions, values, and virtues of the knower. Importantly, this type of thinking, especially in medicine, is based on the patient's narrative of the illness experience, as well on the physician's personal narrative of what it means to be a healer. In this chapter, I discuss objective thinking and reasoning in terms of the debate over the empirical and rational justification of knowledge and with respect to the logical nature of knowing. The subjective way of thinking and reasoning is discussed in terms of intuitions, values, and virtues, as well as narrative. In this way of thinking, humane practitioners address the quality-of-care crisis.

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[1] Nagel (1989) also claims that each of us has a personal view of the world. The issue is how to integrate these two often irreconcilable views. He proposes that integration is not always possible and that the two views must coincide with one another, especially without reducing the personal view to the impersonal view.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

6.1 Objective Thinking

Objective, or scientific or impersonal, ways of thinking or reasoning are concerned with generating knowledge that is universally true about the world. This knowledge is taken to be factual and the facts that make it up are thought to be value-free, i.e. facts that are not distorted by predetermined conceptions of how the world is.[2] "Facts," according to Cassell, "can be verified—empirically demonstrated; everything that is not a fact is unavoidably doubtful and uncertain" (1991, p. 176). The justification of facts is not only empirical but also involves the rational or logical. These two approaches to the justification of factual or propositional knowledge gave rise to a debate between rationalists and empiricists (Pojman, 1998).[3] In this section I examine the debate between them, especially its relationship to the justification of biomedical knowledge. Although the empirical is the means by which biomedical scientists justify medical knowledge, objective knowledge is often considered to be rational or logical. However, before engaging the material of this section, I need to discuss first the epistemic conditions for knowing.

According to the traditional definition of propositional knowledge, someone (S) knows a proposition (P) if and only if: (1) S believes P, (2) P is true, and (3) S is justified in believing P (Pojman, 1998). There are three conditions, then, which must be met for knowledge to be propositional. The first is the belief condition, which states that if something is known then a person—or more importantly an epistemic community—must believe it to be the case.[4] It is a necessary condition that if something is the case, then it must be believed that it is the case. For it would be unusual for a person or an epistemic community to claim knowledge of something but not believe it. However, this condition is not sufficient since something can be believed but not known. Thus, belief pertains to propositions upon which one is willing to place one's or a community's faith that it is the case. That faith is often founded on the metaphysical presuppositions that a person or an epistemic community agrees upon for investigating the world (Collingwood, 1998). Finally, belief is generally contrasted with opinion, which is often based not on evidence but simply on intuition.

The second condition for knowing is the truth condition, which states that if a person or an epistemic community genuinely knows something then it must be true.

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[2] Another important feature of objective knowing is measurement of natural phenomena. Measuring allows scientists to make factual statements untainted by biases and values, of course what is done with these quantitative facts can often lead to distortion and bias.

[3] For a more detailed introduction to the debate between empiricists and rationalists, see Kenny (1986). In contrast to the empiricist and rationalist approach to the epistemological question concerning knowledge justification, Bruce Aune (1970) provides a pragmatic approach. Finally, in contemporary epistemology the debate is articulated in terms of internalism and externalism. An internalist justification is something internal to the individual or community, while an externalist justification is the result of something external to the individual or community.

[4] An epistemic community is composed of individual epistemic agents, whether professional or lay, who are concerned with the production, justification, and consumption of knowledge.

The consequence of this condition is that something cannot be known that is false. Although belief can be false, knowledge cannot be. In other words, knowledge is necessarily true. Of course, the question arises as to what is meant by truth. Philosophers subscribe to various notions of truth. The most common is the correspondence notion of truth. Proponents of this notion claim that truth pertains to propositions that correspond to the facts. In other words, a belief matches one-to-one with the way the world or reality is. Another popular notion is the coherence notion of truth. This notion states that a proposition is true if it coheres with other well known and accepted true propositions. Whether a proposition is true depends on whether it fits in with other known truths or facts. Next, the pragmatic notion of truth states that a proposition is true if it is practical or useful to believe it is true. Truth, according to pragmatists, is what works, especially in terms of ultimately satisfying the knower in a practical manner.

Finally, the emotive notion of truth claims that truth depends upon our emotions or attitudes. This notion of truth may give the impression that all truth is relative, in that a proposition may be true for me but not for you. In other words, there is no consensus as to the criteria for determining a true belief in an absolute sense. There are two problems with this notion. First, truth is not really relative but subjective, i.e. I believe this proposition because I want to. This leads to the second problem: for a person or an epistemic community to know something there must be some type of evidence or warrant for making the claim that a proposition is a true belief. This, in turn, leads us to our final condition for knowing.

The last condition for knowing is the justification condition. Having a true belief is inadequate for saying a person or an epistemic community knows something. The most important epistemological question for any person or epistemic community is: how does a person or a community know that what is known is really the case? This question is about the justification or the proof of what a person or an epistemic community knows. It is the central epistemological question, particularly in the philosophy of science, since Hans Reichenbach (1938) separated, in the first part of the twentieth century, the context of discovery from the context of justification. The answer to this question among philosophers of science has evolved considerably since Reichenbach separated the two contexts.[5]

The epistemological question is also, of course, an important one for the biomedical sciences: "How can therapeutic claims be justified? What means should be used to instill firm belief in a therapeutic claim?" (Christensen and Hansen, 2004, p. 73). Of course, there is an equal concern over the justification of diagnostic knowledge: how does a clinician know that a patient is suffering from this and not another disease? Traditionally, there are two approaches to justification of propositional knowledge: rationalism and empiricism, to which we now turn especially in terms of medical knowledge's justification.

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[5] For further discussion on the justification of scientific theories, including Kuhn's role for subjective values, see Brown (1979).

6.1.1 Rationalism and Empiricism

6.1.1.1 Foundations

Rationalists, such as Plato and Descartes, argue that knowledge, especially analytic or *a priori* knowledge, is known innately or intuitively through the mind's action, although it may never be directly experienced (Pojman, 1998). In fact, rationalists avoid sensate knowledge since it is easily corrupted and the senses are easily deceived. According to Plato, for example, knowledge is achieved by overcoming the world of becoming and the particular in order to grasp the ideal and universal. This innate or intuitive knowledge can then be used as first principles by which additional knowledge can be deduced. Such knowledge is absolute or certain and universal in a sense of being true for all places and for all times, as well as for all people. The propositions that make up this fount of knowledge are often self-evident. As Descartes argued, such knowledge must be clear and distinct and the human mind must have the capacity to know it. Thus, the justification of knowledge for rationalists is strictly a rational or logical affair.

As noted above there are several types of rational knowledge, including intuitive and innate knowledge. Intuitive knowledge depends on rational insight into the phenomenal nature of reality. In other words, it depends upon human capacity to grasp knowledge, especially mathematical knowledge, simply by rational means. Innate knowledge, on the other hand, is constitutive of human nature. Such knowledge is there at birth and is elicited by experiences. This is not to say, however, that the content of the experience is responsible for the knowledge. Both intuited and innate knowledge depend on an epistemic foundationalism in which truth can be directly intuited or is innate to the human condition and thereby forms the basis of additional certain knowledge through deduction.

Empiricists, on the other hand, such as Hume and Locke, argue that knowledge—synthetic or *a posteriori* knowledge, that is—is obtained only through sense experience. For example, Locke viewed the mind as a *tabula rasa* or an empty slate upon which knowledge is written through experience. Thus, sense experience provides the justification for knowledge. In the mid twentieth century, Cornelius Benjamin (1897–1968) provided an insightful working definition for empiricism: "*Empiricism is that theory of knowledge which holds that descriptive symbols (1) are meaningful, (2) are defined ostensively in terms of hard data, (3) and refer to hard data*" (1942, p. 498). "Hard data," a phrase borrowed from Russell, refers to "the clarity with which a datum is given" (Benjamin, 1942, p. 497). For example, a "red spot" immediately sensed or clearly evident is a "hard" datum while myself or a universal represents a "soft" datum. Using the above definition, Benjamin divided empiricism into three types: positivism, factionalism or constructivism, and realism.

According to Benjamin, positivism—especially a "pure" variety—adds two further propositions to the above definition: "(I) *All other symbols (e.g., suppositional symbols) are meaningless;* (II) *Soft data cannot be known to exist*" (1942, p. 498). Although the logical positivists and empiricists are certainly positivists to some extent, their position is not a "pure" positivism *vis-à-vis* the two additional propositions. Fictionalism or constructivism, which Benjamin attributes to Mach and Pearson, adds the following propositions: "(I) *Suppositional symbols (1) are meaningful, (2) are defined by operations of construction on hard data, and (3) refer to nothing;* (II) *Soft data cannot be known to exist*" (1942, p. 499). Finally, realism, which Benjamin designates "realistic empiricism" and attributes it to Russell, Whitehead, and Meyerson, adds the following propositions: "(I) *Suppositional symbols (1) are meaningful, (2) are defined by operations of inference upon hard data, and (3) refer to soft data;* (II) *Soft data can be known to exist*" (1942, p. 499).

Empiricism is also supported by the "new experimentalism" that arose over the last several decades, from work by historians and philosophers of science. Traditionally scientists depend on experiments and the evidence obtained from them to justify scientific theories. In a review of the early work in the new experimentalism, which focuses primarily on Allan Franklin's *The Neglect of Experiment* as well as Peter Galison's *How Experiments End*, Robert Ackermann (1989) drew attention to the "experimental sequences" that these authors rely upon to examine experimental practices in physics. In a critique of the new experimentalism, Deborah Mayo claimed that its proponents ignore or devalue the role of statistical methods in experimentation and she proposed to combine "a standard error statistical tool (significant tests) together with an experimental narrative [provided by the new experimentalists]…to articulate the procedure for distinguishing artifacts in an important class of cases [e.g. Galison's notion of how experiments end]" (1994, pp. 277–278). Mayo (1996) then developed an "error statistical" philosophy in which hypotheses are linked to evidence through a piecemeal testing that is ultimately ampliative.

Recently, Marcum (2007) has proposed a notion of experimental series that shares certain features with Mayo's philosophy of experimentation: the piecemeal approach to testing, reduction of error by increasing severity of testing, and an ampliative nature of inductive inference. However, the notion of experimental series is not focused on statistical methods of experimental practice *per se* but on the *connection* of experimental evidence and not just its conglomeration for justifying a theory.

6.1.1.2 Medicine

The debate between rationalists and empiricists also has a long tradition within medicine. For example, the issue of modern theory (rationalism) and conventional practice (empiricism) for medicine was vigorously debated among physicians in the seventeenth century (King, 1978). Giorgio Baglivi, in the face of contemporary rational medicine called for an empirical medicine:

> The two chief Pillars of Physick are *Reason* and *Observation*: But Observation is the Thread to which Reason must point. Every Disease has, not a fictitious, but a certain and particular Nature, as well as certain and peculiar Principles, Increase, State and Declination. Now, as all these are brought about independently of the Mind, so in tracing their Nature we have no occasion for a subtile and disguis'd way of Disputing, but only for a repeated

> and diligent Observation of what happens to the several sick Persons, and such an acuteness of Mind as is conformable and obedient to Nature's Measures (1723, p. 9).

It took several centuries after Baglivi until empirical medicine became the standard for medical practice. However, rationalism is also an important epistemological component of the biomedical model; but, "rational therapy can only claim to be true if the theory encompasses all the relevant elements of the disease in question" (Christensen and Hansen, 2004, p. 74). Given this restriction, much of modern medicine's epistemology is driven by empiricism and its attendant technology.

The epistemology of the biomedical model, then, is one of empiricism, not only in terms of methodology but also with respect to the technology that supports an experimental method—for medical knowledge and practice within the biomedical model rely on the technological developments in the natural sciences, especially the physical sciences.[6] The acquisition and implementation of medical knowledge reflects the techniques and procedures of these sciences. Moreover, the randomized, double-blind, placebo-controlled clinical trial is considered the "gold standard" for determining the efficacy of a pharmaceutical drug or of a surgical procedure.[7] "The development and increasing acceptance of randomly allocated controlled clinical trials represents," according to Tobias and colleagues, "…the greatest advance this century in medical technology…we all stand to gain from improvements in treatment validation that cannot reliably be obtained by any other methodology" (Tobias et al., 2000, p. 1371). Such clinical trails and other testing procedures became the foundation for evidence-based medicine (Sackett et al., 1996).[8] These scientific practices define acceptable medical knowledge and practice within the biomedical model.

The debate between empiricists and rationalists, however, did not led to a resolution of the problems associated with justifying biomedical knowledge. As Baglivi pointed out centuries ago, both approaches to knowing are critical for the practicing physician:

> Those who oppose Reason to Experience, whether Empiricks or Rational Physicians, seem to be all Mad: For how can we make Reason to act all the Parts of Science, that, as all wise Men ought to acknowledge, is acquir'd by Tryal and Use continu'd thro' a long progress of Time? And, on the other hand, why should Experience be only regarded, and Reason turn'd out of doors?…I understand that Queen Reason, that is plac'd above all the rest, by which a Physician looks into the Principles and Causes of Diseases, foretells their progress and event, and gathers Futurities from what's present (1723, pp. 7–8).

The issue arises whether there is a possible synthesis between the two epistemic positions.

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[6] For a detailed study of the rise of scientific medicine *vis-à-vis* technology, see Reiser (1978).

[7] According to Sackett and colleagues: "Because the randomized trial, and especially the systematic review of several randomized trials, is so much more likely to inform us and so much less likely to mislead us, it has become the 'gold standard' for judging whether a treatment does more good than harm" (Sackett et al., 1996, p. 72). Cartwright (2007) challenges the "gold standard" status of these trials, claiming that they exhibit weak "external validity" in terms of extrapolation from the test population to the larger population.

[8] For further discussion of biomedical research, see Thagard (1999).

Jan van Gijn has proposed an “empirical cycle” for the generation and justification of medical knowledge. “Pathophysiological reasoning leads to hypotheses,” according to van Gijn, “while the content of the rational process is to a large extent driven by the results of the laboratory experiments. The hypotheses should lead to clinical trials and the results of these trials, added to newly gained insights in pathophysiology,” he concludes, “give rise to new hypotheses for clinical reasoning” (2005, p. 75). In other words, the generation of medical knowledge is the continuous process in which empirical results give rise to theoretical insights that are then subjected to further experimental testing, and so on.

The synthesis may also be articulated in terms of inductive and deductive logic. For example, biomedical investigators propose different theories to account for various medical phenomena. These theories are always undergoing tests as investigators conduct experiments. In other words, a prediction is deduced from a given theory and if the prediction is verified, then the theory continues to be used to guide investigations. However, if anomalies, i.e. observations not predicted by the theory, are observed, then a new or modified theory may be formulated based on the anomalous observations. This new or modified theory is then tested experimentally, and if successful may replace the older theory.

The rationalist-empiricist synthesis may also be articulated in terms of sensory or experiential and theoretical activities connected through cognitional processes. As the empiricists claim, sensory data and observations are the key, if not the beginning, of knowing. But as the rationalists claim, such evidence does not constitute knowing but only evidence. A cognitional process must intervene, in which the relationship among the various data and observations yield an insight into the meaning of the evidence. Based on this insight a theory is then formulated, in order to explain the phenomenon that yields the evidence. Of course, all evidence is theory-laden but to varying degrees—from anomalous evidence to evidence to test a prediction.

Although the biomedical model provides important methodological tools for obtaining medical knowledge and for practicing medicine, there is still much work required empirically and rationally, as well as philosophically, to resolve the epistemological issues facing it. “A lot remains to be done,” according to Liberati and Vineis, “in order to create a better understanding of the nature of proof, evidence, and uncertainty; a more balanced research agenda; more coherent mechanisms to improve quality of care; and more substantial cultural efforts to empower patients and consumers” (2004, p. 121). From a rational perspective, a lot of the development depends on what Edmond Murphy calls the “logic of medicine,” the topic of the next section.

6.1.2 Logical Reasoning

Although empirical, especially experimental, procedures are the predominant means for justifying medical knowledge in terms of the biomedical model, rationalism in medical epistemology is not completely without importance or impact. Epistemic claims in the biomedical model depend or should depend, especially for their validity and soundness, on the logical relationship of propositional statements obtained from laboratory experiments and clinical trials. For example, diagnosis and treatment of a patient's disease state depend upon step-by-step, coherent (inductive and deductive) reasoning, from assessing the patient's symptoms to determining the appropriate therapeutic modality. Moreover, logical reasoning in medicine helps to fill in the gaps left by empiricism (van Gijn, 2005). For example, in *The Logic of Medicine* Murphy provides a procedure "for manipulating ideas in Medicine, systematic in the sense that they can be stated formally and subjected to cogent criticism" (1997, p. 9). The logic of medicine, then, is concerned with the analysis of medical data and observations and not just with the relationship of propositional statements.

Logical reasoning is particularly important for interpreting empirical facts. "Reasoning," according to van Gijn, "is required even in the interpretation of clinical trials. Facts cannot always speak for themselves" (2005, p. 74). Indeed, facts are not equivalent to empirical data or observations; rather, they are interpreted experimental data and observations (Lonergan, 1992). In other words, the researcher must have an insight into the relationship among the empirical data as to their intelligibility. That intelligibility is not an empirical object that can simply be grasped by empirical means. For Murphy (1997), "rules of evidence" are critical in the interpretative process for generating factual, objective knowledge. These rules form not only a logical or rational canon for manipulating the relationship of propositional statements and facts but also a hermeneutical canon required for assigning meaning and significance to medical data and observations.

Rationalism, in terms of the logic of medicine, is also important in terms of planning new experiments in order to test theories or hypotheses (van Gijn, 2005). A new trial is expensive and must first make sense in terms of previous biomedical theories and facts. The type of logic associated with the generation of new experiments is deductive.[9] A new hypothesis or theory is used to predict an observation, which is subsequently tested experimentally. This approach is called the hypothetico-deductive method. If the theory or hypothesis passes the test, i.e. the predicted observation occurs, then the theory or hypothesis is said to be verified (logical positivists), confirmed (logical empiricists), or corroborated (Popperians). However, if the theory fails the test, i.e. the predicted observation does not occur, then the theory is falsified or more often modified.

Unfortunately, the process of verification or falsification is not so straightforward since neither can be absolute; for the theory being investigated cannot be tested directly, because the assumptions behind it form an interconnecting "web of beliefs" (Quine and Ullian, 1978). Moreover, falsification is not so straightforward since scientists may formulate *ad hoc* hypotheses to rescue an embattled theory (Lakatos, 1970).

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[9] In contrast, inductive logic involves generalization from a limited set of observations to formulate a theory or hypothesis. The problem with induction is the inability to prove conclusively that a verifying observation will not falsify the theory or hypothesis under different conditions. For example, no guarantee is available to predict that the same result will be obtained consistently.

6.1.2.1 Frequentist Statistics

In the biomedical sciences the fit between a hypothesis and an experimental or a clinical observation is often not quite as straightforward as in the natural sciences, even with the above problems, due to error on the part of the investigator or variability of the natural phenomena. In the biomedical sciences, the significance of the fit is generally determined through statistical testing and analysis. Murphy defines statistics as the "[s]tudy of inferences from finite samples about random processes and their specifications" (1997, p. 468).

Statistical testing can be either descriptive or inferential (O'Brien et al., 1989). In descriptive statistics the researcher describes a population's characteristics, while in inferential statistics the researcher designs a study in which observations are made from a sample of the population under study. Traditional or frequentist statistical tests, such as the Student's t-test or the χ^2-test, allow the researcher to determine whether the inferred conclusion is warranted. Statistical reasoning, then, represents a potent means by which to justify conclusions concerning medical knowledge.

The frequentist approach to statistical analysis involves the comparison of two groups, especially in terms of a pharmaceutical drug or a surgical procedure, with one group representing the experimental group and the other the control group.[10] The question is whether the difference between them is real or significant or simply due to chance, in terms of experimental manipulation. To determine whether the difference is significant or not, medical researchers conduct statistical tests to obtain a probability value (P value), which gives them confidence about the difference.

The first step in this process is to form a null hypothesis, along with an alternative hypothesis. A null hypothesis states that there is no significant difference, while the alternative hypothesis states that there is. For example, if medical scientists are testing the efficacy of a drug the null hypothesis claims that there will be no difference between treated and untreated groups *vis-à-vis* the drug, while the alternative hypothesis claims that the treated group will fair better because of the drug, e.g. cancer remission, than the control group. Once the data is collected, the researchers run a statistical test to determine whether the results are statistically significant, i.e. whether the null hypothesis is rejected.[11] If the null hypothesis is rejected then the alternative hypothesis, i.e. the difference between the two groups is real or significant and the drug is efficacious, is accepted by default.

In frequentist statistical analysis, the medical scientist or clinician is concerned with removing error that can influence the interpretation of results, from null hypothesis testing. There are two types of error. In Type I error, the null hypothesis should be accepted, i.e. there is no difference between the two groups, but the

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[10] Lewis and Wears define the frequentist approach accordingly: "the probability of an event represents the rate or frequency at which the event would occur if the situation in which it might occur was reproduced an infinite number of times" (1993, p. 1329).

[11] A $P < 0.05$, for example, is considered adequate to claim a difference is significant. However, there is considerable debate over the appropriateness of using P values (Matthews, 2000).

statistical test misleads the research into rejecting it. This type of error represents a false positive in that the difference between the treated and untreated groups is not really statistically significant. In Type II error, the null hypothesis is in fact false but the statistical test misleads the research into thinking it is true. This is a false negative in that the difference between the treated and untreated groups is really statistically significant. Type I error is more egregious than Type II error in that the former type of error can result in harm to a patient, e.g. treating with a drug that is not efficacious, while in the later type of error the researcher has missed the effect.

There are several problems with the frequentist approach to statistical analysis of clinical results. First, frequentists do not provide direct proof that the alternative hypothesis is true. "Unfortunately," according to Lewis and Wears, "there may be many alternate hypotheses different from the original one that might have been accepted based on this evidence had they been proposed" (1993, p. 1330). Thus, a P value pertains not to the truth of an alternative hypothesis but only to the null hypothesis. In other words, because there are many alternative hypotheses one cannot be certain that the stated or tested hypothesis is true since it is considered true only by default.

Another problem is that frequentist statistical analysis is concerned with a population and not with an individual, whereas a physician is often concerned with an individual patient. This statistical approach "denies meaning to the assignment of probabilities to single events or hypotheses. Probability assignments are to classes, not to individuals. Thus," conclude Daniel Albert and colleagues, "questions such as 'What is the probability that this patient will die tonight?' and 'How likely is that diagnosis?' do not make any scientific sense in this view. We can only legitimately ask, 'What proportion of the class of patients like this one will die tonight?' " (Albert et al., 1988, p. 64). Although frequentist statistics are very helpful for interpreting research results from large clinical trials, they are for the individual patient "profoundly unsatisfying" (Montgomery, 2006).

6.1.2.2 Bayesian Statistics

Besides frequentist statistical analysis, many biomedical scientists utilize Bayesian statistical analysis to determine the significance and meaning of experimental and clinical results (Broemeling, 2007; Kadane, 2005; Tan, 2001). This analysis is based upon a theorem named after its originator, Thomas Bayes, an eighteenth century nonconformist cleric (Dale, 2003). Lewis and Wears identify two important differences between frequentist and Bayesian statistical analyses: "the nature of the probabilities that we are trying to estimate from the data and the way in which we use the data to modify our estimates of those probabilities" (1993, p. 1329).

Bayesians take probabilities to be an estimate of an event's certainty rather than its frequency. Instead of relying on large numbers or sampling of an event to obtain a rate at which it occurs, the Bayesian estimates the event's occurrence on prior experience. For example, whether a patient responds to a particular treatment is initially based on a researcher or clinician's subjective estimate and experience.

Bayesian use of data is conditional rather than unconditional, in terms of determining the truth of the hypothesis. "Bayesians deal with the probabilities of hypothesis, given a set of data," according to Lewis and Wears, "whereas frequentists deal with the probabilities of data sets, given a hypothesis" (1993, p. 1329).

Bayesian analysis is concerned with the relationship of present data with past data, i.e. "how new evidence can be systematically combined with old to maintain coherently the current state of the evidence" (Murphy, 1997, p. 204). In other words, besides present evidence prior evidence is taken into account to determine the probability of a future event. The first step in Bayesian analysis is to assign a probability distribution to an event's occurrence based on prior data. Next, data are collected on the event's occurrence, and these are used to revise the prior probability distribution. For the Bayes theorem allows the combination of a prior probability distribution with present data to generate a posterior probability distribution, which is then used to estimate the probability of a future event's occurrence and to determine its meaning or significance.[12]

An example in terms of diagnosis may help to clarify the principles of Bayesian analysis (Sahai, 1992). An attending physician wishes to diagnose patients entering an emergency ward in terms of the probability of acute appendicitis (AA), acute pancreatic (AP), or non-specified abdominal pain (NSAP). The prevalence rates for these conditions are as follows: 30% for AA, 5% for AP, and 65% for NSAP. A rebound tenderness test can be used to demarcate between the three conditions. The test consists of pressing down slowly on the patient's abdomen and releasing quickly, which may be accompanied by sharp pain at the site of peritoneal irritation. Previous studies reveal that 80% of AA patients, 15% of AP patients, and 20% of NSAP patients, exhibit rebound tenderness. The posterior probabilities are easily calculated for each condition: 0.64 for AA patients, 0.02 for AP patients, and 0.34 for NSAP patients.[13] Consequently, AA is the most probable or likely diagnosis for a patient exhibiting rebound tenderness.

Bayesian analysis provides several advantages over frequentist statistical analysis. First, it is more consistent with the practical reasoning conducted by clinicians: "the

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[12] Peter Congdon puts it rather succinctly: "The learning process involved in Bayesian inference is one of modifying one's initial probability statements about the parameters prior to observing the data to updated or posterior knowledge incorporating both prior knowledge and the data at hand" (2001, p. 3).

[13] The posterior probabilities are calculated as follows (Sahai, 1992). Let D1, D2, and D3, stand for AA, AP, and NSAP, and S for rebound tenderness. The probabilities based on the data in the text are: $P(D1) = 0.3$, $P(D2) = 0.05$, $P(D3) = 0.65$, $P(S \mid D1) = 0.80$, $P(S \mid D2) = 0.15$, $P(S \mid D3) = 0.20$. The probabilities are then determined using Bayes theorem.

$$\begin{aligned}
P\,(D1\ I\ S) &= P\,(S\ I\ D1)P(D1)/\sum_{i=3}^{3} P\,(S\ I\ Di)P(Di)\\
&= (0.8)\,(0.3)\,/\,[(0.8)(0.3) + (0.15)(0.05) + (0.2)(0.65)\\
&= 0.241\,/\,0.3775\\
&= 0.64\\
P\,(D2\ I\ S) &= (0.15)\,(0.05)\,/\,0.3775\\
&= 0.02\\
P\,(D3\ I\ S) &= (0.2)(0.65)\,/\,0.3775\\
&= 0.34
\end{aligned}$$

Bayes method provides confidence intervals on parameters and P-values on hypotheses which are more in line with commonsense interpretations" (Congdon, 2001, p. 1). Moreover, its prediction of a future event is more precise since it incorporates past information into the determination of that event. Frequentist statistics rarely include such information. Bayesian analysis affords a more dynamic and adjustable statistics. Another advantage is that it provides important information for the practicing clinician concerning the efficacy of a treatment *vis-à-vis* another competing treatment.

In addition, Bayesian analysis permits an investigator in a research trial to examine the data without subjecting the trial to an increased error rate, as in a frequentist trial. "This is a strong argument for its use in clinical trials," according to Lewis and Wears, "because it may be possible to terminate the trials earlier, thus exposing fewer patients to ineffective or harmful therapy" (1993, p. 1335). Finally, another advantage is that Bayesian analysis incorporates the plausibility of a particular event, e.g. of a therapeutic procedure. The likelihood that a drug or surgical protocol is successful must cohere with other successes or failures of other similar therapeutic procedures, current biological and medical knowledge, and the experience of the individual clinician.

6.2 Subjective Thinking

Although biomedical knowledge, especially in terms of laboratory data and clinical observations, is an important and even a necessary component in medical practice, it is not sufficient, according to humanistic or humane practitioners. What is needed is personal knowledge of the patient. According to Cassell, for example, "when we are sick we do not need impersonal knowledge; we require *personalized* knowledge" (1991, p. 133). For Cassell and other humane practitioners, the exclusive pursuit of impersonal knowledge hinders the physician from obtaining the personal knowledge that is critical for treating *this* patient.

Personalized or subjective knowledge is often the information that is ignored or bracketed in scientific medicine; however, it is critical for the patient's healing. The humanistic models of medicine permit "physicians to elicit information from deep within the patient and combine it with objective findings" (Davis-Floyd and St. John, 1998, p. 97). Such information goes beyond the laboratory data to include what Robert Smith calls "human data." Such data involve "information that the patient communicates in words or through nonverbal but uniquely human modes of expression" (Smith, 1996, p. 98).

The problem with the biomedical model, for humane practitioners, is that the physician no longer interacts with an individual patient or that patient's unique circumstances but with the abstract generalities of a patient's disease obtained from statistical analysis of other patients with a similar disease. To reverse this trend these practitioners seek information that is not limited to just a patient's disease state but that also includes information about the person who is suffering from a specific illness. In the biomedical model both laboratory and clinical techniques generate the necessary data needed to identify the disease and to treat it, whereas in humanistic or humane medicine information about the patient as person is also required to treat successfully the illness and to alleviate the suffering associated with it.[14]

According to Cassell, "three kinds of information about sick persons—brute facts, moral, and aesthetic—are necessary to the work of the clinician" (1991, p. 178). While brute facts about a patient's disease state are required for practicing medicine, they alone are inadequate for the patient's healing. Both the patient's moral values and aesthetic sensibilities are required to understand and treat a patient's illness and to relieve the suffering associated with it. Only when a physician is informed about these values and sensibilities, can he or she genuinely care for a patient and assist that patient on the road to healing. "Information about the patient that is being acquired, evaluated, and utilized and which enters into the value and aesthetic assessments may also include," for Cassell, "feelings, body sensations, and even the spiritual (transcendent)" (2004, p. 226). It is this information that cannot be bracketed from the objective clinical data and observations, which is needed to heal *this* sick person. Such information is obtained through subjective thinking.

Subjective or personal reasoning or knowing is shunned in science because it is thought to distort universal and objective knowledge, which is considered the only true knowledge. However, that knowledge is personal, according to Michael Polanyi (1962), because its acquisition and justification depend on our unique perspectives, which include, e.g. our intuitions, values, and aesthetics. Polanyi's notion of personal knowledge depends on what he called the "tacit component" of intelligence, a prelogical phase of knowing that is not necessarily articulatible. It is this component that not only allows for the acquisition of knowledge but also the means to determine its meaning, especially for the human knower.

Objective knowledge is only part of the story for understanding the world, the other part is what that information means for a particular knower. Polanyi rejected the fact/value dichotomy and provided the necessary scaffolding for the current development of emotional intelligence (Tauber, 2008). His personal knowledge prepared the way for other epistemological projects, especially humanistic or humane medicine. Two of these projects—conducted by Foss and Tauber—are briefly discussed below, after which several components of personal or subjective knowledge—including intuitions, values, and virtues—are examined in further detail, followed by a discussion of narrative reasoning.

Laurence Foss (2002) proposes an "infomedical" model in which information, especially in terms of the psychoneurological, can be incorporated into medical practice. His main thesis is that the self as body and mind must be reintegrated as a unit into medical practice. He uses the infomedical model to argue for a "holistic science of self-referentiality" (Foss, 2002, p. 70). Instead of viewing matter as *res extensa* and causation as strictly upward, he argues for viewing matter as *res autopoietica*

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[14] For further discussion, see Cassell (1991, p. 23).

and causation as mutually upward-and-downward. According to the infomedical model, the mind and body are connected by information. To adapt this model to the clinic requires a mind-body dictionary based on "intersemiotic transduction," in which, for example, information is sent from the mind (sender) to immune cells (receiver) *via* neurohumors (channel). Thus, the mind—whether conscious or unconscious—can influence a patient's health.

Foss also put forward a mechanism for information transfer among parts of the organism, as well as between the organism and its environment. By infusing matter with conscious properties he reformulates the second law of thermodynamics as the second law of psychothermodynamics, in which "the universal dynamic is vitalistic and autopoietic" (Foss, 2002, p. 233). Finally, Foss converts objectivity to a subjectified objectivity: "the object is a *subject*, the patient is an agent, each possessing some limited degree of autonomy" (2002, p. 242).

With these changes in place Foss attempts to revolutionize or humanize medicine through a relational model of biology, in which additional information about a body part is determined from that part's context within the organism and its environmental context. It is this information that allows an organism to reform itself in response to external challenges, such as disease. Foss' infomedical strategy is that "the organism as a whole exhibits mindful self-regulating behavior" (2002, p. 269). Thus, for humane practitioners subjective knowledge—of how the patient interprets the experience of illness and provides meaning for it—affects how the patient responds to the illness and its treatment.

Tauber proposes a model for medical knowing that joins together the objective and subjective ways of knowing, through the knowing subject. His proposal is based on a study of Henry David Thoreau's attempt to correct the objectification of knowledge in the nineteenth century, due to the rise of positivism. "Radical objectivity fails because," according to Tauber, "the view from nowhere leaves Man out of the picture, and with no perspective there is no significance, no meaning, no order, and ultimately no self" (2001, p. 21). In the quest for objectivity, the self or subjectivity in terms of the knowing subject is abandoned along with important moral characteristics and values that guide knowing. This has a major impact on modern medicine, which exchanged its empathic character for a dispassionate one. For Tauber, "the glue holding together the various epistemological strands of contemporary medicine is of a *personal* moral character" (2005, p. 10). In other words, what he is seeking is a rejoining of fact and value that the positivists tore asunder.

Tauber's calls his proposal "moral epistemology—moral, because clinical evaluation and care are value-laden, and epistemological, because medicine expresses and employs the form of knowledge" (2005, p. 9). Facts are always given within a context of values and are thus products of interpretation; for values influence and guide knowing. By salvaging facts from positivist objectification, Tauber opens up a space in which to incorporate a patient's values with those of the medical profession. The moral imperative of medicine, then, is to identify a patient's subjective values in order to situate a patient's objective clinical facts. Physicians must become more self-reflective morally and must integrate this moral reflectivity into the technical demands of medicine. Tauber makes several recommendations to that end, such as including an ethical section in the medical record. Such subjective ethical and moral knowledge would complement the objective and scientific knowledge to yield a more comprehensive picture of the patient.

6.2.1 Intuition

Although humanistic or humane models share many epistemological features with the biomedical model, e.g. the assumption that logic is important for practicing medicine, they also rely to some extent on the humanistic practitioner's intuitions. "Intuition in medicine," according to Irvine Page, "is crucial" (1978, p. 218). It is a critical skill of a "good" physician.[15] Intuitions are not necessarily impediments to sound medical judgment and practice; but when judiciously utilized and constrained by the epistemic and empirical boundaries of the biomedical model, they enable a physician to evaluate information about a patient's illness that may surpass quantified data, e.g. laboratory test results. This information obtained from a practitioner's use of intuitional, unconscious resources is not just objective or quantifiable but also human—for behind such information is the face of the "Other" (Tauber, 1999). Such information is important for practicing the art of humane medicine.

What is intuition? William Davidson has provided two definitions. The first is an etymological definition: "the apprehension or discerning of a thing actually presented to the eye" (Davidson, 1882, p. 304). It is based on the literal meaning of the word from its Latin root. The second is philosophical in nature: "an *immediate* perception of the external object seen" (Davidson, 1882, p. 305). Intuition pertains not only to objects in the world but also to ethical qualities and cognitive principles. Moreover, besides the criterion of immediacy, which can be either independent or temporal in nature, two other criteria of intuition include the universal and the irresistible. Intuition is universal in terms of "*not admitting of exception*," while irresistible refers to the power of attraction (Davidson, 1882, p. 308).

In contemporary philosophy, intuition is a way of knowing in which a person *qua* mind immediately apprehends an object, a phenomenon, a decision, or a solution to a problem, without any intervening conscious, cognitive processes.[16] Trisha Greenhalgh lists several features of intuition, including "rapid, unconscious process, context-sensitive, comes with practice, involves selective attention to small details, cannot be reduced to cause-and-effect logic…, [and] addresses, integrates, and makes sense of, multiple complex pieces of data" (2002, p. 396). Intuition is a tacit process that matures, as the practitioner gains more experience. It is also a very creative process that defies simple reduction to an algorithm or set of operational rules, such as inference rules in deductive logic. Finally, intuition is a mental habit of hunches.

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[15] Page (1978) also acknowledges that basic research is a key ingredient to medical practice.

[16] As noted earlier, intuition is also thought to provide *a priori* knowledge. Such knowledge is considered to be self-evident, e.g. the law of non-contradiction.

Historically, intuition is often contrasted with reason as a competing method of knowing. Reason or reflection is a mediated activity (Davidson, 1882). A conclusion to a syllogism, for instance, is immediately obtained not upon inspection of the major premise but through mediation of the middle term. Intuition, on the other hand, is not mediated by any such process. Moreover, reason is considered a superior way of knowing compared to intuition. According to Davidson, “intuition, standing alone, gives us only ‘an obscure and indistinct consciousness’; for a consciousness ‘clear and distinct,’ Reflection is required” (1882, p. 309).[17]

Miranda Fricker (1995), however, argues that such a contrast is based upon a rather “thin” notion of reason, in which reason is based on a set of criteria or rules. She contends for a “rich” notion that includes intuition in thought processes. Based on Kuhn’s use of intuition to account for paradigm changes, Fricker defines intuition “as a non-inferential, typically subconscious mode of hypothesis formation. It constitutes,” she continues, “a sub-personal level of cognitive operation that is crucial to rational enquiry, since it is primarily the intuitive mode which enables us to solve new problems in light of the old” (1995, p. 184). In other words, intuition is a skill of the reasoning process needed to formulate possible solutions (hypotheses) to problems. Intuition is reasonable, then, since these solutions or hypotheses are generated not randomly but selectively. Moreover, it is often involved in determining the acceptability of cognitive conclusions. Consequently, Fricker’s “rich” notion of reason includes a reciprocal relationship between intuition and “thin” reason, especially with respect to the generation of hypotheses and their acceptance.

According to Greenhalgh, most physicians acknowledge the importance of intuition in clinical reasoning and practice. She illustrates its use from her own practice. After examining an elderly male patient, whose chief symptom was abdominal pain, and finding no unusual clinical signs, Greenhalgh “went home that night and told [her] husband that [she] had seen a man who was going to die” (2002, p. 395). Indeed, the man died four days later from a strangulated volvulus. She interprets her hunch in terms of intuition. “When I predicted his impending death,” Greenhalgh concludes, “I was not consciously aware of the intermediate steps that led me to my hypothesis, but when I learnt,” she adds, “the outcome and sought a debriefing with his regular GP, the pieces of the jigsaw were revealed to both of us” (2002, p. 399). Other physicians also point to the importance of intuition. For example, Tauber notes that “the science of medicine is so often guided by intuition” (1999, p. 7).

6.2.2 Values

During the first half of the twentieth century, logical positivists claimed natural science to be a value-free enterprise, in order to guarantee the objectivity of scientific knowledge. However, during the latter half of the twentieth century, especially after

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[17] Davidson (1882) acknowledged that in terms of thought processes at large, intuition and thinking share common feature such as perception, memory, and imagination.

the historiographic revolution in the philosophy of science, values emerged as important factors in the scientific enterprise. For example, Kuhn (1977) claimed that the justification of scientific knowledge requires the transformation of the objective criteria of accuracy, consistency, fruitfulness, scope, and simplicity, into similarly denoted subjective values, values that influence the justification of scientific knowledge but do not determine it. Justification, then, "requires a decision process which permits rational men to disagree, and such disagreement would be barred by the shared algorithm [objective criteria] which philosophers have greatly sought" (Kuhn, 1977, p. 332).

After Kuhn, science is now viewed as a value-ladened enterprise and its knowledge as value-dependent. For example, Robert Proctor (1991) argues that scientific knowledge is not neutral but rather driven by political and societal values. Again, Tauber (2007) claims that the fact/value separation in science is specious and that science is imbued with values that serve an epistemological function. Humanistic practitioners also acknowledge the importance of values for medical knowledge and practice. Indeed, Cassell claims that "a value-free medicine is a contradiction in terms" (1991, p. 185).

But, what is a value and how is it used epistemologically? The notion of value is not easily defined and there are several approaches to its definition within the philosophical literature. Values are also used in a variety of fashions. Tauber (2005), for instance, distinguishes three uses based on Najder's analysis: quantitatively, in terms of the value of something, attributively, in terms of something being conferred value, and axiologically, in terms of a principle which one uses to assign value. Although the axiological use of values is examined in Chapter 11, in the remainder of this section their use is explored not only in the justification of scientific and medical knowledge but also in its acquisition. Finally, William Stempsey warns about the difference between value and personal preference, especially for medicine: "Personal preferences do play an important role in our ideas about the value of health and disease, but I will argue that there are other objective values that ought to be recognized as values by any person, whether or not that person has a preference for them" (2000, p. 42).

Ernan McMullin (1982) divides the use of values in science into two categories: epistemic and non-epistemic.[18] Epistemic values are those that are used to advance the veracity of scientific claims. They are important for assessing a "fit" between scientific theories and the natural world and include, e.g. external consistency, fertility, internal coherence, predictive accuracy, simplicity, and unifying power. Non-epistemic values are those values that can be used, when epistemic values fail to distinguish between empirically equivalent theories. They do not enhance a theory's "epistemic status" but reflect specific cultural, social, political, and religious

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[18] McMullin (1982) also discusses briefly two additional "construals" of values: truth and ethical; but dismisses their immediate importance in theory choice. Laudan also is not concerned with ethical or moral values but only with "the role of cognitive values in the shaping of rationality" (1984, p. xii).

beliefs. Although these values are influential in the short run within a community of practitioners, they are eventually replaced by epistemic considerations. In a study on the development of evolutionary science during the nineteenth and twentieth centuries, for example, Michael Ruse (1999) demonstrates a shift from non-epistemic to epistemic values in its practice.[19]

Besides the categorization of values as epistemic or non-epistemic, they can also be divided into factual or ethical in terms of the pursuit of scientific and other kinds of knowledge (McMullin, 1982). A factual value is not limited simply to the absolute correspondence of the world to scientific theories but also to the corrigibility of scientific theories in light of additional evidence. Ethical values are important to a professional community and its proper moral function. Certainly scientists and theologians, for example, share a genuine desire to know the facts and to conform to ethical values that ensure them. For instance, honesty is the disposition to tell not only the truth but also to avoid telling a lie. Moreover, honesty involves uprightness and reliability of character.[20] These values are essential for the acquisition of knowledge in most disciplines. Although scientists are often portrayed as being more objective than those in other disciplines, postmodern studies have deflated that caricature.

Values in medicine serve epistemic and non-epistemic, as well as factual and ethical, functions in the acquisition and justification of medical knowledge, especially for humanistic or humane practitioners. For example, Cassell advocates the need for knowing a patient's values in order to obtain the patient's "personal knowledge" (1991, p. 172). Values, then, are critical for gaining a comprehensive picture of the patient, which is needed for adequately treating a patient: "applying medical science to particular patients mandates thinking in terms of values as much as in terms of the objective facts of the body" (Cassell, 1991, p. 107). Moreover, values are also critical for determining the nature of health and disease.

Cassell (1991) identifies five sources of values needed for medical knowledge and practice. These include the values society places on health and illness, the goals of medical care in general, physicians' personal and professional values, people's individual values, and the values that under gird the operations of a system as a complex unity or whole. "Values, then, like scientific facts, are essential," according to Cassell, "to the clinician's knowledge of sick persons" (1991, p. 184).

Tauber also argues for the importance of values in medical knowledge and practice: "values structure all facts so that their meaning and significance only take form when they are sorted, organized, prioritized, and acted on as determined by the rules governing the value-based choices optimizing patient care" (2005, p. 240). The traditional distinction then between facts and values is a false dichotomy and Tauber proposes to collapse facts and values in terms of a moral (values) epistemology (facts).

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[19] Ruse (1999) also contends that non-epistemic values can still operate as metaphors in even the most robust science.

[20] For a discussion of the relationship between virtues and epistemology, see Zagaebski (1996).

To support a moral epistemology, Tauber (2005) divides values into positivist and nonpositivist categories. Positivist values are objective and neutral and guarantee medical knowing as scientific knowing. Although medical knowledge can profit from incorporating these values, exclusive use, however, as in the biomedical model robs medical practice of its humane dimension. That dimension requires nonpositivist values, which are subjective and reflect the personal goals of the patient and healthcare provider. In other words, positivist values are necessary for the physician's knowledge of the patient but are not sufficient, "for the glue holding together the various epistemological strands of contemporary medicine is of a *personal* moral character" (2005, p. 19). This moral dimension of medicine based on these nonpositivist values is what makes medicine the humane practice that it should be.

6.2.3 Virtues

Recently the role of virtues in the acquisition and justification of knowledge has gained prominence in philosophy, in a sub-discipline called "virtue epistemology." "The name 'virtue epistemology'," according to Linda Zagzebski and Abrol Fairweather, "has come to designate a class of recent theories that focus epistemic evaluation on properties of persons rather than properties of beliefs or propositions" (2001, p. 3). Virtue epistemology is based on virtue ethics, in which actions of persons are analyzed in terms of the normative characteristics of the person rather than of the acts themselves. In like manner, virtue epistemologists are interested in the normative characteristics of the person than in the knowledge itself. As noted above, traditional objective epistemology focuses on knowledge production and justification in terms of the evidence or methods used to produce it, while virtue epistemology focuses on the intellectual virtues of the epistemic agent.

Intellectual virtues are divided into two types (Greco, 2000). The first pertains to the reliable or sound cognitive faculties or capacities, including the senses, especially vision, memory, intuition, inferential reasoning, and introspection, necessary for obtaining and ensuring knowledge. This kind of virtue epistemology is called "reliable virtue epistemology," since knowledge as justified true belief is based on the reliability of cognitive faculties and processes (Sosa, 1991; Greco, 2002). The second type of intellectual virtues pertains to the virtuous features of the epistemic agent, such as honesty, open-mindedness, humility, fairness, curiosity, tenacity, and integrity. This kind of virtue epistemology is called "responsible virtue epistemology," since knowledge is based on the epistemic agent's responsible and conscientious activities (Zagzebski, 1996; Roberts and Wood, 2007).

Although virtue epistemology is not fully utilized in contemporary medical epistemology, the virtues of the physician, whether reliable or responsible, are important both for the acquisition and substantiation of medical knowledge for clinical practice. Not only must the physician's cognitive faculties and capacities function properly, but his or her disposition must be sufficiently responsible to warrant an accurate diagnosis and appropriate therapeutic modality. For example, a physician must be honest in terms of evaluating the clinical data and observations and not allow biases and prejudices to distort their interpretation.

6.2.4 Narrative Reasoning

"Biomedical reasoning may be sufficient to explain the bounded realm of microscopic events and abstract principles, but other kinds of reasoning are necessary," according to Linda Hunt and Cheryl Mattingly, "when those principles are applied to the unbounded universe of the real world of physical, phenomenological, and social lives" (1998, p. 270). One of the more prevalent alternative forms of reasoning to biomedical reasoning is narrative reasoning. In contrast to the objective facts and to their logical analysis associated with objective, biomedical reasoning, the humanistic or humane models incorporate the patient's narrative of the illness experience into medical practice that utilizes subjective and personal reasoning.

Narrative reasoning, for Barbara Schell, "involves thinking in story form" (2003, p. 136). This type of reasoning allows the humane practitioner to access personal information concerning illness' disruption of the patient's life. Its main function is to make sense of the confusion and anxiety illness introduces into the patient's lifeworld. Whereas logical biomedical reasoning is concerned with the validity and soundness of the arguments and the truth of medical statements, narrative reasoning is concerned with the meaning and significance of the patient's illness story. Practitioners of narrative medicine ask questions about the nature of a patient's illness experience, while biomedical practitioners ask questions about the nature of the disease itself.

Kathryn Montgomery also maintains that medical practice should be grounded in narrative reasoning: "Physicians use both the scientific or hypothetico-deductive and the practical or interpretative and narrative, but it is the latter that makes them clinicians" (2006, p. 45). Narrative reasoning is a case-based rationality and involves the interpretation of a patient's illness experience. It is not reducible to a set of inference rules, but requires a hermeneutical canon for interpreting a patient's story. Rather than banning anecdotal knowledge, narrative reasoning depends upon it for making the best possible clinical judgment and decision.

Narrative rationality, according to Montgomery (2006), is akin to Peirce's notion of abduction. Clinicians begin with a particular patient before them and based on the presenting symptom(s) collect preliminary evidence, which they interpret in terms of the patient's narration of the illness experience. Clinicians then continue to collect further evidence based on the patient's story, until the cause of the patient's illness is determined. The process is a "circular, interpretive process" and the information clinicians gather is not a set of isolated abstract facts but rather facts connected through an intricate narrative, both on the part of the patient and the clinician (Montgomery, 2006, p. 47).

Mattingly (1998) identifies three features of narrative reasoning in medicine. The first involves the motives that animate a patient's story, especially in terms of a patient's actions and the consequences of those actions. "In narrative reasoning," according to Mattingly, "an 'inner world' of motive and desires is seen as the significant underlying cause of events" (1998, p. 284). For Montgomery (2006), medical causation is best explicated in terms of narrative reasoning rather than in biomedical statistical analysis. Although medicine strives for simplicity in terms of causation as an ideal, the practice of medicine reveals that causation includes, besides the pathophysiological, the psychological and cultural—for illness is expressed at these various levels.

Striving for the ideal of scientific causation misrepresents the true nature of clinical causation. "Because clinical reasoning is retrospective," argues Montgomery, "it needs to be represented in a way that allows a larger, looser concept of cause than linear cause and effect. What is needed," she insists, "is representation that can accommodate time and chance. Narrative," she concludes, "provides for the circumstantiality or (probably) noncontributory detail and leaves room for contingency, conjunction, and multiplicative causes that unfold over time" (2006, p. 80). Although the statistical approach to clinical causation is necessary for a secure foundation to medical practice *vis-à-vis* biomedical facts, narrative provides access to subtler dimensions of it.

The next feature of narrative reasoning involves the construction of a patient's social world. Narrative reasoning allows a physician to enter into a patient's social world in order to better understand the impact illness has on a patient's lifeworld. "Narrative provides a wonderful vehicle for making sense of actions, because," explains Mattingly, "it seeks to make actions comprehensible by showing how they are *responsible* from the agent's perspective" (1998, p. 285). It is that perspective that provides a physician with the critical information for addressing a patient's existential concerns, which are an important component of a patient's illness experience and require addressing in order to heal a patient fully. "To know what patients endure at the hands of illness and therefore to be of clinical help," argues Rita Charon, "requires that doctors *enter* the worlds of their patients, if only imaginatively, and to see and interpret these worlds from the patient's point of view" (2006, p. 9). This type of knowing distinguishes between a biomedical practitioner and a genuine healer (Davis-Floyd and St. John, 1998).

The final feature of narrative reasoning involves the probable and possible rather than the determinant and necessary, as in logical, biomedical reasoning. "Narrative is needed," according to Mattingly, "to contemplate the world in its complexities and to decipher how one should navigate one's way in it, for narrative is built on surprise, chance, contingency, [and] the anomalous event" (1998, p. 289). Narrative reasoning is able to assist a person in navigating life's exigencies and in making sense of them, because it is grounded in the practical or phronetic (Charon, 2006; Mattingly, 1998; Montgomery, 2006). As practical reasoning, it is concerned with the good; and, for medicine, the good is defined in what is best for the patient. Patient care then "requires practical reasoning, or *phronesis*, which Aristotle described as the flexible, interpretative capacity that enables moral reasoners (and the physicians and navigators he compares with them) to determine the best action to take when knowledge depends on circumstance" (Montgomery, 2006, p. 5).

Montgomery (2006) examines the process of narrative reasoning in terms of maxims, beginning with various rules-of-thumb. She contrasts these informal rules with formal decision analysis prevalent in current academic medical circles. Although these decision procedures are aids to clinical practice, she warns that they are no substitute for it. Moreover, the informal rules or maxims are generally expressed as contradictory pairs. For example, in history taking a physician must balance the maxim that a patient's articulation of the presenting symptom is key to diagnosis with the maxim that one must be wary of whether a patient's articulation of that symptom is accurate or truthful. Although the reliance on contradictory maxims appears undignified for a profession that celebrates its reliance on science, Montgomery insists that the general nature of medical practice demands it. These rules "were never meant for universal application; they are situational wisdom that have arisen out of (and proven useful in) circumstances very like those identified in a particular case" (Montgomery, 2006, pp. 117–118).

Montgomery (2006) also examines maxims that guide a clinical encounter to those that guide a clinical mindset with respect to clinical thinking and judgment. These maxims are metarules or phronesiological maxims, which function at a broader interpretative level. One of the most important ones, according to Montgomery, is the "When you hear hoofbeats, don't think zebras" maxim. This maxim "reminds clinicians that the presence of signs and symptoms shared by a number of diagnoses is not likely to indicate the rare one on the list" (Montgomery, 2006, p. 122). However, a clinician must also be aware that a patient's symptoms may point to a rare disease. Moreover, there are other maxims that govern clinical thinking and judgment. For example, in terms of the goals of medicine the contradictory pair is to do everything possible and to do no harm. She identifies several lessons from this phronetic approach to clinical reasoning, especially the lesson that one should learn from one's elders but question what they teach you.

6.3 Summary

The biomedical model is patterned after objective, scientific thinking and reasoning. It is concerned with the logical validity of its arguments and the truth or veracity of its propositional knowledge. In contrast, humanistic or humane models are patterned after subjective ways of thinking and reasoning that include intuitions, values, virtues, and the illness story. Moreover, subjective ways of thinking deal with issues that are often not addressed by objective ways of thinking but nonetheless are important for a patient's wellbeing. As such, these subjective ways of thinking are championed as means to address the alienation and objectification patients feel when treated by biomedical practitioners, and consequently serve to address the quality-of-care crisis.

Finally, Hunt and Mattingly (1998) claim that objective and subjective thinking or reasoning are not contrary to one another, but rather they are complementary. In other words, subjective thinking or reasoning instantiates objective thinking or reasoning. As Lonergan articulates the resolution of the relationship between objectivity and subjectivity from a larger perspective: “Genuine objectivity is the fruit of authentic subjectivity” (1979, p. 292).

Chapter 7
Clinical Judging and Decision Making

How do physicians make the necessary judgments and decisions when faced with diagnostic and therapeutic uncertainty and choices? Are there rules or algorithms by which clinical judgments and decisions are made? Certainly how a physician reasons has an impact on the types of judgments and decisions he or she makes. Beginning in the late eighteenth and early nineteenth centuries, clinical practitioners endeavored to make medical judgments and decisions more rational (Engelhardt, 1979). Their endeavors did produce fruit, especially in the twentieth century.

For the biomedical practitioner, clinical judgments and decisions are objective and modeled after the judging and decision making processes of the natural sciences. "The assumption that clinical reasoning is applied scientific reasoning," claims Mattingly, "underlies nearly all research on clinical reasoning in medical fields, and the informal perceptions of practicing health professionals" (1998, p. 275). For humanistic practitioners, clinical judgments and decisions reflect a subjective reasoning process, which includes the patient's personal information and values and which also involves the patient's narration of the illness experience.

Although there are profound differences between biomedical and humanistic or humane practitioners, the general outline of the process for clinical judgments and decisions are to some extent similar. That process, or "journey" as Engelhardt (1979) calls it, begins with collecting data and making observations and is followed by hypotheses formation and testing, after which judgments and decisions concerning the patient's disease state and the best way to proceed therapeutically must be made by both the physician and patient. The difference between biomedical and humane practitioners concerns the role, if any, of logic or intuition in the process of judging and deciding the best course of action, as detailed in the previous chapter. Often the debate revolves around whether the physician must adhere to strict guidelines or can utilize gut feelings. But as some commentators note, clinical judgments and decision making are complex notions and "in their rich and full sense are freighted with values, including ethical and moral values" (Engelhardt, 1979, p. xxii). In this chapter, the nature of clinical judgment, which is often considered informal in nature, is examined first, followed by the clinical decision making, which is generally modeled formally.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

7.1 Clinical Judging

What is meant by judging and judgment, especially from an epistemological perspective? And specifically, what is a clinical or medical judgment? Generally, judgment involves an evaluation or assessment of evidence, data, or observations, in order to discern or decide a path of action, which is discussed in terms of decision making in the next section. According to Bernard Lonergan (1992), judgment is embedded in a cognitional scheme and is an answer to a reflective question, which results from a reflective insight.

In Lonergan's original cognitional scheme there are three levels of operations. The first is the level of presentations or experience. It is concerned with the data and observations of experience, i.e. with the given. The next level is that of intelligence or understanding, in which one has an insight into the intelligibility of the data and observations. This level involves the events associated with thinking and reasoning, as discussed in the last chapter. At this level, one answers questions of fact, e.g. who, what, when, etc. The final level is that of reflection on the insights into the intelligibility of data and observations. At this level, the reflective question, "Is it so?," is addressed. To answer that question, requires a reflective insight into the truth or falsity of the questions of fact. According to Lonergan, "judgment is the last act in the series that begins from presentations and advances through understandings and formulations ultimately to reach reflection and affirmation or denial" (1992, p. 301).

Between the question for reflection and the judgment that represents its answer is reflective understanding and insight. That reflective understanding or insight is the result of "marshalling and weighing the evidence," i.e. one comes to grasp "the sufficiency of the evidence." For Lonergan, "to pronounce judgment without that reflective grasp is merely to guess" (1992, p. 304). But how does one know when one grasps the evidence sufficiently to make a judgment. Lonergan proposes several possibilities (Tekippe, 1996).

The first is that there are no further relevant questions to be answered. Once sufficient insight into understanding is grasped, one is justified to make the appropriate judgment. Akin to this is one's expert knowledge into the problem at hand. As one continues to learn about the problem, one becomes more informed as to what constitutes proper and sufficient evidence to answer the question for reflection. Next, there is the satisfaction of one's intellectual curiosity. Humans are, by nature, creatures who, in principle, have an unrestricted or a pure desire to know. When such desire is sated, to pronounce judgment is then generally warranted. Finally, humans display a capacity (unless otherwise impaired) to determine wisely when the evidence is sufficient to justify a judgment.

Although Lonergan provides a precise and unambiguous analysis of general judgment, Engelhardt (1979) claims that the notion of clinical judgment is ambiguous. It can either refer (1) to the "capacity" to make judgments or discernments or to draw conclusions concerning the patient's disease state and to determine what steps must be taken therapeutically or (2) to the "experiential origins" of that capacity. For biomedical practitioners, the origins of clinical judgment are logical and include scientific reasoning. Generally the capacity for such judgments is based on rules and algorithms. Such is not the case for humanistic practitioners. “One finds physicians asserting,” claims Engelhardt, “that one can make adequate clinical judgments only on the basis of actual experience, not simply on the basis of general principles of physiology, pharmacology, pathology, or even on the basis of a reconstruction of past clinical judgments” (1979, p. xii). In other words, the capacity for clinical judgment is not simply reducible to rules or algorithms. Rather, it depends upon a tacit or an intuitive dimension.

Consequently, there is a sharp divide between biomedical practitioners and humanistic or humane practitioners over on the origins of clinical judgment and the capacity by which judgment is made. On the one hand judgment reflects the outcome of objective scientific reasoning, while on the other hand it reflects the subjective outcome of intuitive reasoning. In this section, clinical judging is examined in terms of the objective and subjective dichotomy and the art and science dichotomy, as well as with respect to its tacit dimension and the role of phronetic and narrative reasoning. Finally, I discuss the notion of a good clinical judgment.

7.1.1 Objective or Subjective?

In a piercing analysis of the intuitive or subjective dimension of clinical judgment, Paul Meehl (1954) demonstrated that in terms of clinical prediction statistical or actuarial methods outperform intuitive or clinical methods. The statistical method involves comparing the aggregate of clinical data to an actuarial table to determine how best the patient responds to therapy. The clinical method forgoes any use of such tables. “Clinicians,” observed Meehl, “often hold the view that no equation or table could possibly duplicate the rich experience of the sensitive worker” (1954, p. 26).

Meehl’s analysis of the empirical data, however, revealed that “special powers” like intuition do not function effectively in the clinic. Only through statistical analysis could the efficacy or “clinical usefulness” of a therapeutic procedure be determined accurately. “Out of the welter of diverse cases, with mixed data and complex judgments, you simply cannot tell,” according to Meehl, “whether your use of a procedure is paying off or not” (1954, p. 136). Most clinicians have interpreted Meehl’s assessment as a crippling blow to subjective clinical judgment and as a clarion call to replace it with the objectivity of actuarial tables and other mathematical models (Baron, 1988; Katsikopoulos et al., 2007).[1]

The reaction to Meehl’s critique, as well as to research on judgment by others, such as Egon Brunswick, Kenneth Hammond, and P.J. Hoffman, involved attempts

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[1] Although Meehl bristled at the notion of subjective clinical judgment, he “never abandoned his belief in clinical expertise despite its vulnerabilities to all manner of mental shenanigans” (Westen and Weinberger, 2005, p. 1269). Rather, such clinical judgment plays a limited role in the production of clinical knowledge.

to model clinical judgment and efforts to test the validity of those models empirically (Goldstein and Hogarth, 1997). Most models are based on a notion of human judgment as "a matter of combining pieces of information that are weighed according to their importance" (Doherty and Brehmer, 1997, p. 547). The simplest model to account for the combining and weighing of information and evidence is a linear one. This model also performs the best in terms of predicting a practitioner's diagnostic judgment. For example, Lewis Goldberg (1971), in a controlled study, demonstrated that the linear model accounts for Meehl's data on clinician's judgment for assessing patients' psychotic or neurotic states, as compared to other nonlinear models such as conjunctive, disjunctive, exponential, and logarithmic.

What makes the linear model so powerful is that it captures the "vicarious" nature of a patient's communication of symptoms and of the clinician's use of them in diagnostic judgment (Hammond, 1955).[2] Although linear models are powerful, they are severely limited. Borrowing a term from mineralogy, Hammond (1955) claimed that such models are "paramorphic." According to Hoffman, "the mathematical description of judgment is inevitably incomplete, for there are other properties of judgment still undescribed, and it is not known how completely or how accurately the underlying process has been represented" (1960, p. 125). But, the paramorphic nature of models is not all bad since models do aid in "describing, predicting, and understanding human judgment" (Doherty and Brehmer, 1997, p. 546).

In an attempt to simulate clinical judgment, in order to enlist the aids of computers in medical practice, John Gedye embedded it in the clinical encounter between the patient and the physician. "A clinical encounter," according to Gedye, "is thus an occasion for the exercise of clinical judgment, and since it is generally accepted that this utilizes a clinician's finest sensitivities, it might seem that any attempt to formalize such an activity would be a move back into a world of inflexible concepts" (1979, p. 95). However, he recognized that inflexible concepts are often needed to provide a patient with an unambiguous assessment of his or her illness, as long as these concepts are "appropriate" for a patient's specific needs.

Gedye also argued that clinical judgments are to be made from arguments that are "hypergnostic," i.e. arguments in which the conclusions extend "beyond" the clinical data and observations.[3] What grounds this hypergnostic leap is the similarity between two cases that share a variety of features: "the solubility of the hypergnostic problem may depend on having, or finding, an appropriate representation of the data, appropriate in the sense that it manifests pertinent criteria of nearness" (1979, p. 110). Gedye warned, however, that not all clinical judgments are hypergnostic in nature and may require further analysis and research.

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[2] For further discussion, see Brehmer (1994).

[3] Ernan McMullin (1979) pointed out that Gedye's term "hypergnostic" is commonly referred to as "ampliative inference" in the philosophy of science literature.

7.1.2 Art or Science?

The discussion over clinical judgment often takes the form of a debate over the art or science of clinical judgment. Eliot Sober criticized the debate over whether clinical judgment is an art or a science, by distinguishing four dichotomies in the debate that he claims are fictitious. The first is advocated by clinicians who view clinical judgment as an art: “The skilled clinician is capable of achieving an intuitive insight that is inherently non-logical” (1979, p. 30). Sober rejected this assertion, claiming that clinical judgment involves the same non-mysterious problem solving skills as any other professional discipline. The next dichotomy is that artful clinical judgment takes into consideration the patient’s unique personal information and not simply the generalized features of the disease state. Again, Sober rejected this position. He contended that the patient’s uniqueness is overplayed but that science, although abstracting from the unique, cannot represent the concrete world completely with its abstractions.

The third dichotomy is that the art of clinical judgment takes into consideration the patient’s emotional state. Sober, however, argued that emotions can also function cognitively as a source of important information concerning the patient’s illness. The final dichotomy is the distinction between art of clinical judgment concerned with the qualitative and its science with the quantitative. Again, he rejected this dichotomy. “Inferences [derived from clinical judgments] using purely qualitative concepts,” according to Sober, “can be just as precise as the most finely honed mathematics” (1979, p. 36).

Sober advocates an informational approach to clinical judgment, composed of both logical and psychological features. “Clinical judgment,” for Sober, “is to be understood as occurring within an information-processing system, which has as its input a specification of observed characteristics of the patient and perhaps some laboratory data, and has as output a differential diagnosis” (1979, p. 32). Clinical judgment, then, is a skill that involves both art and science.

Alvan Feinstein also advocated a moderate position with respect to the dichotomy of art and science, concerning clinical judgment. Although traditional attempts to define clinical judgment in terms of scientific rationality have failed because of the complexity of human observations and data and attendant decisions, Feinstein attempted to overcome this failure by distinguishing between the various kinds of observations and cognitive activities involved in clinical judgment. “By dividing the observational data into descriptions of disease, illness, and host, and by analyzing the therapeutic and the environmental decisions separately,” claimed Feinstein, “clinicians can discern the ingredients of clinical judgment” (1967, p. 28).

The artful dimension of clinical data, according to Feinstein, is relegated to those observations pertaining to the description of the illness and the host and to environmental decisions. However, the scientific dimension of clinical judgment is consigned to those observations concerning the disease and to therapeutic decisions. “This aspect of clinical judgment,” opined Feinstein, “is a product of the clinician’s mind, of his cultivated intellect and knowledge” (1967, p. 29). Thus, he challenged clinicians to incorporate scientific methodology into clinical judgment. “Clinical medicine, therefore, like most other human activities” concluded Feinstein, “is an indivisible mixture of both art and science” (1967, p. 295).[4]

7.1.3 Tacit Dimension

Gilbert Goldman provided a robust defense of the tacit dimension for clinical judgment. To that end, Goldman defined clinical judgment as “the mental processes involved in all stages at which the clinician collects and interprets data; formulates a problem statement, confirms and refutes diagnostic hypotheses; considers, plans, and implements possible diagnostic and therapeutic options, tests, and interventions; and evaluates likelihoods and outcomes” (1990, p. 48). According to Goldman, the dominant view of clinical judgment is that it is based exclusively upon an explicit form of knowledge that can be reduced to rules, formal models, and computer simulation. However, he argued that this view has failed (Goldman, 1991). The reason is that there is a tacit dimension to clinical judgment. This dimension consists of “knowledge which is possessed and utilized on an implicit, or subsidiary, level without conscious awareness” (Goldman, 1990, p. 50).

Goldman gave the example for the tacit dimension of clinical judgment in terms of a surgeon who knows exactly how much force to exert when suturing. The tacit dimension of clinical judgment involves skills, which may be physical in nature, as with the example of the surgeon, or cognitive or mental in nature, as in clinical judgments. Importantly, the tacit dimension is complementary to the explicit dimension, in that it represents the “knowing how” that grounds the explicit dimension of “knowing what” (Goldman, 1990). According to Goldman, the tacit dimension consists of the “routines which complement the explicit rules of practice, which tell [the physician] which rules to employ when, and which case requires the use of which information” (1990, p. 53).

Although Michael Scriven (1979) acknowledged the importance of tacit or implicit reasoning in clinical judgment, he claimed that such judgment is not simply a matter of tacit knowing. In like manner, logical reasoning in terms of rules or algorithms is also important; but, again, clinical judgment is not reducible to logical reasoning. According to Scriven, “in clinical inference leading to clinical judgment, we operate from such rough guidelines *and these cannot be adequately formulized either as statistical or as exact generalizations*” (1979, p. 15). In other words, clinical judgment is neither an intuitive faculty nor a logical faculty; rather, it is a skill.

Scriven claimed that the skill needed for clinical judgment is based on logic different from traditional mathematics. This logic is one of “considerations.” What

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[4] In a twenty-five year retrospective article, Feinstein (1994) has acknowledged that patient-care research is advancing and that there is still ample room for improvement in the process of making clinical decisions.

Scriven meant by this is a logic that can combine the multifaceted dimensions of information required to make a clinical judgment. Besides relevant generalizations, his "logic of considerations" also incorporates "many relevant estimated values of variables." The result is an epistemology he called "the theory of weak knowledge." It is an epistemology that includes "possibilities and approximations" in its epistemic base. In conclusion, Scriven contended that although statistical or actuarial methods do outperform intuitive or clinical methods it is not necessarily the case that all such objective methods will prevail all the time.

7.1.4 Phronetic and Narrative Reasoning

Recently, Aristotle's notion of *phronesis* or practical reason has also been used to explicate and defend clinical judgment from a humanistic or humane perspective (Jonsen and Toulmin, 1988; Pellegrino and Thomasma, 1981a). For example, Kathryn Montgomery defines clinical judgment in terms of "the practical reasoning or phronesis that enables physicians to fit their knowledge and experience to the circumstances of each patient" (2006, p. 33). Montgomery contrasts this type of practical reasoning with that of scientific reasoning, for the latter is concerned with obtaining truths of a universal sort while the former is concerned with the truth of the individual patient presenting to the physician. Clinical judgment based on practical reasoning leads to the best course of action for a patient given the specific conditions for that patient and not for some statistical mean given some generic set of conditions.

Duff Waring (2000), however, challenges the claim that clinical judgment is the result of phronetic reasoning. Waring argues that it is best described as a result of *techne*, for the practice of clinical judgment as *techne* leads to the production of health. Aristotelian *phronesis*, on the other hand, is concerned with "living well in general." According to Waring, clinical judgment may be analogous to *phronesis* but it does exemplify it.

Humane practitioners also utilize narrative reasoning, when making clinical judgments. For example, Montgomery examines the role of narrative reasoning *versus* scientific reasoning in clinical judgment with respect to generalization and particularization. Although generalization, especially for epidemiological statistics, is important for the science of medicine, particularization, in terms of the patient's individual values and concerns, is critical for sound clinical judgment. "Understanding the particulars," asserts Montgomery, "despite the inexact relevance of biological science and statistical epidemiology to the circumstances of one person's illness, is medicine's chief moral and intellectual task" (2006, p. 86).

The particulars of a patient's illness are best determined though narrative reasoning, according to humane practitioners. Moreover, anecdotal case studies are not incidental for medical practice but essential. Thus, the individual patient is not peripheral but central to clinical judgment and to medical practice. And, for that patient what is important is what Montgomery calls the "individual cause," which addresses why the patient became sick in the first place. That cause is best determined through narrative, not scientific, clinical judgment.

7.1.5 Good Clinical Judgment

What makes for good clinical judgment? There are several criteria that have been proposed to determine such judgment. Arthur Elstein (1976), for example, identified several features of a good clinical judgment. The first is "affective sensitivity." "Sometimes good judgment," noted Elstein, "is said to be displayed when a physician is sensitive to the emotional needs of a patient as well as to the psychological and social problems that frequently arise in coping with a grave illness or as a consequence of certain therapies" (1976, p. 698). Good judgment, therefore, requires the physician to take into account more than simply the clinical data concerning the patient's physiological or pathological condition.

The second feature of a good judgment involves the physician's ability or capacity to evaluate competing principles, in order to determine which principle applies in a given case or if another principle should prevail. In other words, a physician, in order to display good judgment, may need to think outside the traditional clinical box. Elstein provided an example of a patient suffering from both congestive heart failure and significant blood loss. One requires removal of fluid, the other addition. "A physician with good judgment," according to Elstein, "knows how to reconcile these apparently competing demands" (1976, p. 698). The final feature of a good clinical judgment is an ability to select an adequate diagnostic hypothesis or therapeutic protocol. For example, a physician displays good judgment when presaging difficulties associated with different therapeutic protocols and ameliorating them for the patient.

Engelhardt (1981) proposed that good clinical judgment also involves the fewest costs or risks to the patient, both in terms of diagnosis and therapy, with respect to morbidity, pain and suffering, and financial expenditures. Clinical judgment consists of both a correct diagnosis of a "medical problem" and its resolution in terms of an appropriate therapeutic modality. "Good clinical judgment," for Engelhardt, "requires, then, the reliable weighting of the probable diagnostic significance of various clinical findings while taking into account the significance for the patient of various possible adverse outcomes" (1981, p. 314).

The foundation of good clinical judgment, according to Engelhard, is prudence, especially in terms of what a patient values *vis-à-vis* health and sickness. Such judgment assists a patient in negotiating "the geography" of medical problems and their solutions. Prudence allows both patient and physician to choose between various competing values. A good clinical judgment then is a complex process that results in the most appropriate clinical outcome for the patient. Finally, it is "a creative process in the sense of requiring changing responses, given different patient evaluations of the significance of such possible outcomes" (Engelhardt, 1981, p. 314).

Narrative reasoning, as already alluded to, is also considered essential for good clinical judgment. For example, Montgomery claims that the very features biomedicine denies in its attempts to be a science are the ones needed for sound clinical judgment and good medical practice. These features include “appreciation of the individual person and the anecdotal event, recognition of a person’s pain, attention to feelings, an awareness of one’s emotional life and participation in the lives of others, and knowledge of the provisional nature of clinical knowing” (Montgomery, 2006, p. 174). Narrative reasoning provides the best means for accessing this information. It is through the interpretation of the patient’s illness story that physicians are best able to understand the suffering associated with illness and then to make the appropriate clinical judgment concerning what best to do therapeutically. Trisha Greenhalgh (1999) makes a similar claim for the role of narrative reasoning in clinical judgment. She argues for a “narrative-interpretive paradigm” to make sense of not only the objective clinical data but also the subjective data of the illness experience.[5]

7.2 Clinical Decision Making

Whereas judging pertains to evaluation of evidence, decision making involves action on that judgment. After weighing or judging the evidence, one then decides on the best course of action. One simply does not evaluate the evidence and then generally does nothing. Rather, judgment of evidence often calls forth some type of action based on that judgment. For example, to collect laboratory evidence on a patient’s condition and then evaluate it leads to some type of therapeutic action. To stop short of deciding on an action after making a judgment fails to complete the full operations intelligence calls forth.

Lonergan (1979) revised his tripartite cognitional structure articulated in *Insight* to include a fourth level, the level of decision. Once one makes a judgment about the evidence, then a decisive action generally follows. Importantly such action is the level at which freedom occurs, a freedom that involves responsibility on the part of the self-conscious knower. For Lonergan, only through our decisions are we authenticated: “One has to have found out for oneself that one has to decide for oneself what one is to make of oneself; one has to have proved oneself equal to that

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[5] Greenhalgh argues for a clinical judgment that integrates both the objective and subjective dimensions of clinical judgment, especially in terms of evidence-based medicine: “Far from obviating the need for subjectivity in the clinical encounter, genuine evidence based practice actually presupposes an interpretive paradigm in which the patient experiences illness in a unique and contextual way. Furthermore, it is only within such an interpretive paradigm that a clinician can meaningfully draw on all aspects of evidence—his or her own case based experience, the patient’s individual and cultural perspectives, and the results of rigorous clinical research trials and observational studies—to reach an integrated clinical judgment” (1999, p. 325).

moment of existential decision; and one has to have kept on proving it in all subsequent decisions, if one is to be an authentic human person" (1979, p. 121).

Although decision making in general has an important existential dimension, clinical decision making is founded on more formal decision analysis procedures, which are examined in the first part of this section. I then look at various decision models that have been proposed for clinical decision making, followed by a clinical example illustrating clinical decision making. Finally, the procedure of tree pruning in order to make decision making manageable is examined, concluding with a discussion of the advantages and disadvantages of applying formal decision analysis to the clinic.

7.2.1 Decision Analysis

Whereas clinical judgment depends on implicit or tacit dimensions of human cognitive and emotional resources, clinical decision making involves more formal strategies such as flow charts and algorithms, especially assisted by computer technology. In other words, whereas clinical judgment is concerned with questions of understanding pertaining to the patient's illness and whether that understanding is accurate based on the evaluation of the clinical evidence, clinical decision making is concerned with the decisions about what action to take and whether it is the best one to take for the patient. The questions that animate decision making are: "How do people decide on a course of *action*? How do people choose what to do next, especially in the face of uncertain consequences and conflicting goals?" (Goldstein and Hogarth, 1997, p. 4). These questions have stimulated a vast literature on medical decision making, in an attempt to answer them.

"Sound clinical decisions," according to Jerome Kassirer and colleagues, "depend upon the integration of a variety of facts regarding a patient's condition with an extensive store of medical knowledge" (Kassirer et al., 1988, p. 212). This general approach is divided into a number of steps. For example, David Ransohoff and Alvan Feinstein (1976) identified five of them. The first is precise articulation of the clinical problem, often in a hypothetical format, followed by construction of a mathematical model of it. The form of the model is generally in terms of a decision tree, composed of branches connected by decision and chance nodes. The next step is to assign objective or subjective probabilities to uncertain events within the decision tree. Peter Doubilet and Barbara McNeil (1988) divided these probabilities into objective probability values, those that are based on previous evidence, and subjective probability values, those that depend on the physician's expert opinion or judgment. The third step is to assign a "utility" value for each expected outcome. These values are often based upon the personal value or preferences of either the patient or physician. The next step is to determine the expected value for each branch of the decision tree, by calculating the product between the probability and utility values for each branch of the decision tree. The final step is to choose the branch with the highest expected utility.

The goal of formal decision analysis, then, is to maximize the expected value of a decision. It is important to note that in humanistic models it is imperative to factor into a decision the patient's values or preferences concerning the outcome. Even though one branch of a decision tree yields the highest expected value, it may be rejected because of the patient's values. For example, a clinical practitioner may assign a utility of 0 to death as an outcome, while the patient may not. Moreover, Doubilet and McNeil (1988) and other advocates of decision analysis have added an additional step of sensitivity analysis, which involves altering systematically assumptions and values within the first three steps to determine how sensitive a decision is to variation of these assumptions and values. This step is important since clinical decisions are based on uncertainty, and physicians are unlikely to trust their clinical judgment unless the decision based on this formal style of analysis demonstrates that it can account for uncertainty.

7.2.2 Decision Models

Within the last several decades, a variety of models have been proposed to account for clinical decision making. Deborah Zarin and Stephen Pauker (1984) provided a general scheme for most models. In their scheme, the first three steps of decision making correspond to the following inputs: structuring the problem in terms of a decision tree, probabilities or likelihoods of outcome, and values or utilities of outcome. These three inputs result in a decision and consequent action *via* an integrative process. Zarin and Pauker then identified four possible types of models, which "differ from one another in (1) which of the two participants (doctor or patient) is the source of each input, and (2) the source of the integrative process that is used" (1984, pp. 185–186).

The first model is the classic or traditional paternalistic model, in which the physician is the source for all the inputs and integrative process. The next two models incorporate the patient in an effort to satisfy the doctrine of informed consent. In the first of these models, the physician informs the patient of the inputs and possible outcomes; but, the patient remains a passive agent and the physician is still the source for the integrative process. In the next model, the physician informs the patient but it is the patient who decides what inputs to use and who is the source of the integrative process. In the final model, the physician is responsible for the first two inputs, the structure of the decision tree and probability of outcomes, and also is responsible for informing the patient about them. The patient is then responsible for the third input or the value or utility of the outcome. The physician is the source of the integrative process. For Zarin and Pauker, the last model is the best for clinical decision making since it involves the expert knowledge of both the patient and physician.

7.2.3 Example

Jerome Kassirer (1976) has provided a superb example of clinical decision making, based on an actual clinical case. The patient was a twenty-four year old female, who had both kidneys removed several years earlier because of bilateral hypernephromas.

Recently, she received a kidney transplant, underwent a splenectomy, and was treated for *Klebsiella* sepsis and pneumonia. She was admitted to the hospital because of vomiting and diarrhea, and she was found to have a fever (104.2°F) and rales in the left lung. Her symptoms worsened, and "she had severe left upper quadrant abdominal pain radiating to the left shoulder, generalized abdominal tenderness, diminished bowel sounds, splinting of the left chest, and poor movement of the left diaphragm" (Kassirer, 1976, p. 156). Her white blood cell count was 8,900. The initial diagnosis was subdiaphragmatic or subphrenic abscess, which is an accumulation of purulent exudates or pus below the diaphragm.

Although the diagnosis was uncertain the clinical decision facing the attending physicians was whether to operate or not, in order to resolve the abscess by draining the pus. The decision tree contained two main branches: the first represented surgery, the other not. At the time of the uncertain diagnosis, the probability the patient was suffering from a subphrenic abscess that could be resolved through surgery was 0.3. According to Kassirer, this probability meant that "we have estimated that 30% of patients with a clinical picture comparable to that shown by this patient on this date would have a subphrenic abscess and 70% would not" (1976, pp. 157–158).

Both main branches also bifurcated, with the first branch representing a surgically correctable abscess and the other a non-surgically correctable one. The probabilities for resolving the abscess were based on evidence published in the literature. In order to determine the best decision, the utilities were next calculated. The best outcome, a spontaneously resolved abscess by non-surgical protocol, was assigned arbitrary units of 100, while the worst, death, 0 units. Other outcomes ranged between these two values. Based on these utilities, the expected value for surgery was 62.5 units, while for non-surgery 81.1 units.

The clinical decision made in this case was to treat the patient non-surgically with antibiotics and fluids, along with nasogastric suction. Although the patient improved initially, after several days her symptoms became worse. As Kassirer narrates, "the new data available from the evolving clinical course, the change [increase] in white cell count, the results of echography, scan, and plain film markedly increased the probability of a surgically accessible lesion" (1976, p. 159). The probabilities were revised to reflect the changing clinical picture, even though there was no precedent within the published literature. Based on the same utilities as before, the outcome of the new decision tree differed from the original. Now the expected value of surgically resolving the abscess was 38.9 units, while non-surgical were 25.9 units. Even though surgery was the best decision, Kassirer points out that it is not without serious risks given the deteriorating condition of the patient.

7.2.4 Pruning Decision Trees

Clinical decision trees can become quite large and complicated (Kassirer, 1976). In response, physicians and patients may only focus on a sub-branch of it and ignore others. Consequently these trees are often pruned by removing sub-branches, through the physician's clinical judgment. "Branches can be pruned," claims Kassirer, "only if it is obvious from inspection that the probability and utility of the outcome are such that their combination will yield a value that will contribute little or not at all to the expected value of the outcome" (1976, p. 161).

Even though the pruning process is often carried out at an intuitive or instinctive level, there are principles that can be used to make pruning more logical in nature (Schwartz et al., 1973). The main principle concerns the degree of the probabilities and risks. "If both the probability of a given event and the risks associated with it are extremely high," claim Schwartz and colleagues, "the branch cannot be pruned. In contrast, if both the probability and the risks are low, branches can be pruned with impunity. The decision to prune or not to prune," they add, "when there is a low probability but a relatively high risk is more difficult" (Schwartz et al., 1973, pp. 461–463). Besides the probabilities and risks, the values or utilities associated with the branches, especially from the patient's perspective, must also be factored into whether to prune or not.

7.2.5 Advantages of Decision Analysis

Given the level of uncertainty in medicine and the decisions that must be made often on incomplete information, decision analysis provides several advantages for making clinical decisions. "Advocates," according to Stephen Eraker and Peter Polister, "have claimed that decision analysis enhances effective decision making by providing for logical, systematic analysis and by prescribing a course of action that will conform most fully to the decision maker's own goals, expectations, and values" (1988, p. 380).

Specifically, Eraker and Polister identified three advantages to decision analysis for clinical decision making. The first is that decision analysis is explicit in terms of its overall structuring of the clinical problem, especially with respect to the formation of a decision tree. "With the decision analysis framework," observed Eraker and Polister, "one can identify the location, extent, and importance of any areas of disagreement, and ascertain if any such disagreements have a significant impact on the indicated decision" (1988, p. 382). The next advantage is the quantitative nature of decision analysis, in terms of the probabilities and values. Such quantification provides a more objective means for evaluating the various clinical decisions. The final advantage is the prescriptive nature of decision analysis, which provides the best option in terms of what diagnosis to make or therapy to follow.

7.2.6 Criticisms of Decision Analysis

Although decision analysis continues to influence diagnostic and therapeutic decisions, there have been several criticisms levied against it. In comments on Kassirer's 1976 paper, for example, Ransohoff and Feinstein (1976) identified several problems with the strategies of decision analysis. The first is that the decision tree must include all the possible outcomes and actions or it will distort the clinical problem. "If these additional courses of action are possible and reasonable but are not considered in a decision analysis," according to Ransohoff and Feinstein, "then the structure [of the decision tree] is unsatisfactory because the problem has not been completely evaluated and the results may therefore be misleading" (1976, p. 166). The next set of problems concerns the estimation of the probabilities for the various outcome branches. Most probabilities in the literature may not be appropriate for the particular patient under treatment and that quantifying such probabilities may be difficult at best for the physician (Ransohoff and Feinstein, 1976).

The final set of problems revolves around assigning utility values. The first problem is "that many important outcome values are intangible and are therefore not easily measured" (Ransohoff and Feinstein, 1976, p. 166). The second problem is the comparison of possible outcomes, which have different attributes and require different scales for measurement. "This double task of converting intangible and multi-attribute outcomes into meaningful numbers," according to Ransohoff and Feinstein, "creates a major difficulty that *is* inherent in decision analysis and that cannot be managed readily if at all" (1976, p. 167). The final problem is who determines the utility values. Should it be the patient, the physician, hospital or HMO administrators, insurance company executives, or society at large such as politicians? Each of these would most likely assign a different utility value to a particular outcome (Ransohoff and Feinstein, 1976).

There are other problems with the quantitative approach of decision analysis. For example, Patrick Croskerry points out that clinical decision making is a complex process: "there are often too many variables or unknowns in the clinical situation, too many ethical and financial restrictions, or too many other resource limitations to even allow a simple quantitative approach to guide each clinical decision" (2005, p. R5). Logical rules associated with decision analysis cannot capture the complexity of many clinical decisions.

Croskerry (2005) also identified several hard wiring problems with the quantitative nature of decision analysis. The first is instinctive or behavioral in nature. The reasoning process that underlies decision making is adaptive in nature and reflects evolutionary pressures. Thus, much of human decision making depends upon the hard wiring selected through natural selection. In addition, personality and gender also influence clinical decision making. There are various styles of decision making that reflect a clinician's personality or gender. For example, anesthesiologists are by lot withdrawn compared to surgeons and may acquiescence to a surgeon's clinical decision concerning an operation (Croskerry, 2005).

Heuristics and biases also play an important role in clinical decision making (Croskerry, 2005; Tversky and Kahneman, 1974). "A variety of studies in the clinical setting," according to Croskerry, "have repeatedly demonstrated the importance of heuristics and biases in information processing and establishing a diagnosis" (2005, p. R3). Heuristics are the rules of thumb that permit a clinician to include or factor intuitions into a decision. For Amos Tversky and Daniel

Kahneman, "heuristic principles…reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations" (1974, p. 1124). However, there are a number of biases, around forty in all at the time of Croskerry's article, which can distort a clinical decision. These biases include, for example, ascertainment bias, ego bias, gender bias, outcome bias, and overconfidence bias. Given the complexity of clinical decision making, Croskerry concludes that "one approach does not fit all… There will always be a gradient of decision-making that parallels the degree of uncertainty associated with the wide variety of patient conditions, and which are to some extent discipline-specific" (2005, p. R6).

7.3 Summary

Clinical judgment and decision making are important epistemological components of both the biomedical and humanistic or humane models of medical practice. For biomedical practitioners, clinical judgment and decision making are based on scientific reasoning. This often leads to a paternalistic position for physicians, who find it too difficult or too time consuming to translate the technical dimension of medical language and concepts that under gird clinical judgment and decision making into language and concepts the patient can understand in order to participate in the judging and decision making processes. Of course, this paternalism not only plays an important role in the origination of the quality-of-care crisis but also exacerbates it.

Humane practitioners, on the other hand, endeavor to include the patient as an active agent in the clinical judging and decision making processes. By including the patient in these processes, the physician and patient can communicate more effectively. Narrative-based medicine has been championed as a means for promoting more effective communication that leads to an enhanced quality-of-care.

Chapter 8
Medical Explanations

Knowledge is generally associated with an ability to provide an explanation. In other words, if we know something we can express that knowing in terms of explaining it. For example, if I claim to know what is responsible for a disease I might offer an explanation in terms of a bacterium as an etiological agent. An explanation, traditionally, is an argument that provides a reason to account for a phenomenon, event, or action. It makes clear or intelligible what is obscure or unknown. It is more than just a simple description or statement of an event or a listing of its features or characteristics that answer questions of how or what. Rather, an explanation is an answer to a question of why. For example, an explanation may offer a cogent answer as to why cancer affects one segment of a population but not another. In explaining an event, an attempt is made to get behind or underneath it, in order to provide knowledge or an understanding of the event that can often be used to control or manipulate it.

There are several types of explanations (Ladyman, 2002). A historical explanation provides the antecedent events responsible for a past event. For example, one nation may cite previous grievances for invading another country. A psychological explanation accounts for organismic behavior. For example, a person may exhibit violent behavior because of being abused earlier as a child. An astrological explanation relies on the alignment of stars and constellations to account for an event or action. For example, a person may exhibit specific behavior patterns because of their astrological sign. A theological explanation invokes divine action. For example, a person may suffer from a disease because the divine is punishing that person for a trespass or sin. A teleological explanation invokes purpose to account for an event. According to Aristotle, for example, fire rises because its natural location is up or away from the center of the earth.

Although these various explanations are commonly used in everyday discourse, they are not as precise in terms of their explanatory power as a scientific explanation. Explanations in the natural sciences and hence in the biomedical sciences are intimately associated with natural laws and scientific theories. Theories generally function to enable us to explain natural phenomena, with universal and statistical laws providing the basis for them.[1] Theories, then, under gird powerful explanatory

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[1] Pierre Duhem (1954) claimed that a physical theory is not simply an explanation but a set of mathematical propositions used to represent an experimental law. Explanation, for Duhem, involved removing from reality "the appearances covering it like a veil, in order to see the bare reality itself" (1954, p. 7).

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

systems that can account for natural phenomena and events through the application of natural laws. By enabling explanatory systems, they capture the way the world is and reveal the mechanisms underlying the observable and unobservable dimensions of it. The explanatory power enabled by theories generally depends on the power and precision of the laws used to account for natural phenomena. Besides laws, scientific explanations as enabled by theories may also rely on other factors such as identifiable causes and functions. For example, diabetes can be explained as the absence of insulin.

In this chapter various explanatory schemes are examined, especially in terms of scientific and medical knowledge. Beginning with covering law explanation that dominated philosophical understanding of explanation for decades, the discussion turns to explanatory schemes proposed to resolve the problems associated with the covering law model. The first and most powerful explanatory scheme is causal explanation, especially Paul Thagard's causal network instantiation scheme for explaining disease. Kenneth Schaffner champions a "six component" explanatory scheme for the biomedical model that incorporates many of the preceding explanatory schemes, especially the causal mechanistic approach. Inference to the best explanation and functional explanation also represent two important explanatory schemes that are relevant for the natural sciences.[2] And, these explanatory schemes are utilized in the biomedical model to varying degrees of success to account for medical phenomena. Finally, although humanistic or humane practitioners appreciate the power of these explanatory schemes they often utilize a narrative explanatory scheme that includes the patient's personal knowledge, especially in terms of the patient's illness story.

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[2] Besides these explanatory schemes there are several other schemes proposed by philosophers of science. For example, Peter Achinstein (1983) proposes an illocutionary explanation scheme in which something is explained in terms of acts and their products. Achinstein starts with "the explaining act itself—the act in which by uttering or writing words someone explains something. From that act," he concludes, "a 'product' emerges: an explanation" (1983, p. vii). In addition, Michael Friedman (1974) proposes an unificationist explanatory scheme, in which scientific explanation represents scientists' attempt to unify a range of natural phenomena. Philip Kitcher (1976) raises several problems with Friedman's scheme. He later develops a revised version of the unificationist scheme, which is composed of several components (Kitcher, 1989). The first is the schematic sentence, in which the nonlogical components are replaced by symbols. Next are filling instructions, which guide a symbol's instantiation. An ordered sequence of instantiated schematic sentences forms a schematic argument. Finally are the classifications, which define the premises and conclusions within a schematic argument. The entire ensemble generates an argument pattern and an explanation, then, which represent an account of a variety of phenomena with as few stringent argument patterns as possible. According to Kitcher, the fewer and more stringent the patterns used to explain a wide range of phenomena the more unified the explanations.

8.1 Covering Law Explanations

In the late 1940s, Carl Hempel and Paul Oppenheim introduced an explanatory model using the laws of science. They claimed that explanations are like arguments in which the conclusion or explanandum, a statement used to describe the phenomenon to be explained, is logically deduced from the premises or explanans, those statements used to do the explaining. The explanans consist of at least one scientific law and of the initial or antecedent conditions. For example, why a patient's cardiac output (CO) is 4.91 is explained by the initial conditions of a stroke volume (SV) of 70 ml and of a heart rate (HR) of 70 beats per minute and by the law: CO = SV × HR. Since laws are an integral component of the Hempel and Oppenheim's explanatory model, it eventually became known as the "covering-law model" (Dray, 1954, 1957). In other words, what is to be explained is covered or accounted for by a scientific law.

Hempel and Oppenheim (1948) provided the following scheme for their explanatory model:

$$\frac{\begin{array}{c} C_1, C_2, C_3, \ldots C_n \\ L_1, L_2, L_3, \ldots L_n \end{array}}{E.}$$

The explanans appears above the line and consists of the initial conditions (C) and the laws (L) while the explanandum (E) appears below the line and consists of the explanation. Because the relationship between the explanans and the explanandum is deductive and the laws are universal or deterministic generalizations, the scheme is generally called a "deductive-nomological" (DN) explanation (Hempel, 1965).

Although DN explanations can be used to account for many natural phenomena in which the natural laws are universal or deterministic generalizations, not all phenomena can or could be explained using such laws. Some phenomena are better explained using probabilistic or statistical laws or generalizations. Moreover, the relationship between the explanans and the explanandum is not deductive but inductive. Consequently, Hempel (1965) called this scheme "inductive-statistical" (IS) explanation. For example, whether a person contracts lung cancer from smoking a pack of cigarettes a day for 20–30 years depends upon many factors and can only be assigned a probability. In other words, contingencies exist that may prohibit a person from contracting lung cancer from cigarette smoke—contingencies that are often unexplainable in deterministic terms.

Although the covering law model of explanation was influential, several problems arose that signaled its demise, especially for application to disciplines such as biology and medicine. First, these disciplines have few natural laws that are universal or even statistical generalizations and yet they do provide adequate explanations of biological phenomena (Thompson, 1989).[3] Next, there are many counterexamples that are explanatory but do not conform to covering law explanation or that conform to covering law explanation but are not explanatory (Okasha, 2002).

Sylvain Bromberger (1966) identified another problem in terms of the symmetrical relationship between the explanans and the explanandum. For some phenomena, this symmetry does not hold. For example, Bromberger conceded that the covering law model explains a pendulum's period in terms of its length and the law of simple periodic motion; however, the pendulum's length can be accounted for by explanations other than the pendulum's period and the law of simple periodic motion. Wesley Salmon (1971) also pointed out the problem of relevance. For example, Salmon noted that although a person takes birth control pills to avoid pregnancy and even though these pills are relatively effective in preventing pregnancy, if the person is a male then the explanation, although satisfying the requirements of the covering law model, is irrelevant.[4]

8.2 Causal Explanation

Many commentators on covering law explanation account for its problems, especially in terms of symmetry and relevance, in terms of Hempel's antirealist position towards unobservable objects and his shunning the notion of mechanistic causation (Okasha, 2002). However, the notions of causation and explanation are traditionally connected. Aristotle's four causes are often presented as explanations. Thus, an explanation involves citing the various causes responsible for a phenomenon under consideration. For example, Aristotle (2001) explained the existence of a bed in terms of its material cause, wood, its formal cause, the bed's shape, its efficient cause, the bed's maker, and its final cause, for sleeping. During the scientific revolution, as noted in Chapter 2, the Aristotelian causes were reduced to two: material and efficient causation. Scientists adopted the notion of material causation to explain natural phenomenon, while philosophers continued to debate efficient causation to determine its precise nature for explaining events.

Causal explanation traditionally depends on the regularity of sequential events, either temporally or spatially. An event is considered the cause of another event if it precedes the caused event and is connected with it in a regular and consistent fashion. As such then the event is explained in terms of its antecedent cause. For example, if an organism is exposed consistently to a bacterium before developing a specific disease then the bacterium is said to cause the disease and serves as the principal etiological agent for explaining the disease. For causal explanation, the cause may be either necessary, i.e. the absence of the cause guarantees the absence

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[3] Hempel and Oppenheim (1948) acknowledged that their scheme could not account for all types of explanations.

[4] See Salmon (1971), for further discussion of the notion of the statistical relevant explanation.

of the effect, or sufficient, i.e. the presence of the cause guarantees the presence of the effect, or both. In other words, causal explanation traditionally assumes an ontological relationship between the cause and its effect. Finally, simple or singular causation is generally inadequate for explaining the nature of many natural phenomena since the events underlying them are complex and involve multiple interacting antecedent events. In these cases, causal explanation cannot be captured by simply stating a single cause but only by dissecting the causal matrix.

As noted earlier, Hume's critique of causation revolves around the notion of "constant conjunction." Since he denied any knowledge of causation is possible other than the regularity of causal sequences, his notion of causation became known as the regularity view (Beebee, 2006). Causal explanation is nothing more than describing the association of events, with no ontological basis for the association. In other words, there is no substantive causal structure that underlies a causal explanation. So, for example, to explain that a disease is caused by a bacterium requires only a regular concurrence of the bacteria's presence and the disease's expression. But this minimalist criterion for causal explanation fails to capture the extent to which causal explanations allow scientists both to develop theoretical accounts of phenomena and to manipulate them based on those accounts.

To address the apparent problem associated with the regularity scheme of causal explanation, Salmon (1984) proposed an alternative scheme called "causal mechanical" explanation. In this scheme, he claimed that causation refers to actual causal mechanisms and that an explanation depends upon explicating those mechanisms. His scheme, along with others similar to it, like Phil Dowe's theory (2000), is called process explanation, since the relationship between cause and effect involves the existence of specific sequential interactions or processes.

An important component of Salmon's scheme is the notion of causal interaction, by which two causal processes intersect spatially and temporally. The result of this interaction is a modification of or change in the properties or features of one or both of the causal processes. For example, an infectious disease is explained mechanically or mechanistically in terms of the intersection of the bacterial and organism. The issue, however, is how to distinguish the explanatorily relevant processes from those that are irrelevant, especially for complex systems like biological organisms.

James Woodward (2003) introduces a manipulability causal scheme of explanation to address this issue of relevance. The scheme is predicated on the variability of both cause and effect in terms of their values or properties, such that one event causes another if and only if the values or properties of the effect are altered upon intervention of the cause. Importantly, the other variables within a causal nexus must be held constant in order to determine the causal contribution of an antecedent event to an effect. Experimental trials best represent this scheme, in which scientists manipulate the causes and observe the changes in the effects. To that end, Woodward illustrates his causal scheme with randomized, controlled clinical trials. As discussed in chapter 10, these types of trials allow biomedical and clinical scientists to control for placebo and other effects not pertinent to a drug's action in order to determine its efficacy.

Medical knowledge according to the biomedical model is generally explained in terms of mechanistic causes, which represent the objective reasons for medical phenomena—whether disease or therapy. Physicians are interested in explanations that involve only the physical causes or mechanistic entities and forces responsible for the patient's disease and recovery. Just as scientists explain natural phenomena in terms of material components and mechanisms, so biomedical clinicians explain disease phenomena in terms of material entities and mechanisms. For example, biomedical clinicians reduce the cause of cancer to the mutated forms of around a half-dozen genes (Hanahan and Weinberg, 2000). Once the causal mechanism is identified, treatment or therapy, then, is generally based on chemical or physical intervention, either in the form of a pharmaceutical drug or a surgical procedure.

Thagard (1999) proposes a causal network instantiation explanatory scheme that combines both epidemiological and biological research. His explanatory scheme is a system of causal interactions, in which correlations, alternative causes, and mechanisms, along with conditional causal probabilities, factor into explaining why a person contracts a disease. "Explanation of why people get a particular disease," for Thagard, "begins by noticing associations between the disease and possible causal factors" (1999, p. 101). In order for these associations to count as correlations that lead to causation, the association must be statistical or probabilistic. The probability is more than just conditional but also causal, in that the probability is a measure of the disease causing the effect rather than simply being associated with the effect. Such a probability measures causal power. In addition, causal power must also take into consideration alternative possible causes of the disease. Elimination of these causes enhances causal power. Finally, knowledge of underlying mechanisms supports a causal relationship but is not necessary to infer it.

Thagard (1999) uses a duodenal ulcer case study to illustrate the causal network instantiation explanatory scheme. He begins with a patient who is taking a nonsteroidal anti-inflammatory drug such as aspirin for arthritic pain. Overuse of the drug can lead to increase acid secretion and rapid gastric emptying among other effects that expose the gastric lining to possible injury. In addition, genetic predisposition to any of these effects may exacerbate the patient's condition. Besides these factors, environmental conditions such as stress or cigarette smoking may contribute to increased acid secretion and gastric emptying. The patient is now susceptible to *Helicobacter pylori* infection, which Barry Marshall demonstrated can cause gastritis, duodenitis, and ultimately a duodenal ulcer. Importantly, Thagard's explanatory scheme attempts to account for complex disease processes in which no single cause is responsible for the disease.

Schaffner (1993) also introduces a multi-component explanatory scheme that welds causal mechanistic features with a variety of explanatory schemes proposed by others. According to Schaffner, "the Hempel model of scientific explanation and Salmon's earlier S-R [Statistical Relevance] account suffered from defects that an appeal to causation could remedy" (1993, p. 262). To that end he develops an explanatory scheme composed of six components, by explicating the metaphysical, epistemological, and logical elements of causation. The first is a semantic component that consists of a series of generalizations composing the biomedical system (BMS). The next is a causal component, which can be either deterministic or probabilistic. The third is a unificatory component, in which domains of a BMS are unified. The next is a logical component, in which the explanandum is a causal conclusion from a set of premises. The fifth is a comparative evaluation inductive component, in which the Bayesian inductive support of an explanandum is compared to and evaluated with that of others. The final is an ideal explanatory text background component, in which an explanation is selected from a range of "ideal" explanatory text background through pragmatic concerns.

Schaffner provides an example of the explanatory power of this scheme, especially the causal component, with short-term and long-term memory learning in the sea hare, *Aplysia californicum*. For short-term memory learning, a stimulus, such as an electrical shock, to the head or tail triggers the retraction of the gill and siphon into the mantle. The duration of the retraction can be lengthened by sensitizing the hare through a regime of shocks prior to a test shock. The molecular mechanism for this sensitization involves the release of a neurotransmitter from a facilitating interneuron that closes the potassium channels in the presynaptic membrane, through a cyclic AMP-protein kinase cascade. The result is an increased calcium flow in the presynaptic membrane, with an increased release of the neurotransmitter from the presynaptic bulb and, hence, longer retraction times. The mechanism for long-term memory learning is analogous to short-term memory learning but includes the regulation of genes and additional complexity such as "parallel processing."

Schaffner discusses the significance of this neurophysiological example for his "six component" explanatory scheme, especially in terms of the causal component. According to Schaffner, general laws equivalent to those found in the physical sciences are not constitutive of the biomedical sciences. "What we appear to have," claims Schaffner, "are rather intricate systems to which apply both broad and narrow causal generalizations that are typically framed not in purely biochemical terminology but rather in terminology that is characteristically interlevel and interfield" (1993, p. 285). In other words, a BMS is a complex system of interacting levels of varying scopes. For example, the sea hare's siphon-gill retraction behavior is explained in terms of macromolecules (neurotransmitters) interacting with cells (neurons), which in turn interact with tissues (muscle). The result is a complex interlevel system of causal generalizations that are idealized in schematic form. Importantly, "the explanations that are characteristically biological (as well as biomedical) will be 'causal/mechanical' more frequently than not" (Schaffner, 1993, p. 296).

8.3 Inference to the Best Explanations

In the mid 1960s, Gilbert Harman introduced an explanatory scheme called "inference to the best explanation" (IBE).[5] According to Harman, "one infers, from the premise that a given hypothesis would provide a 'better' explanation of the evidence than

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[5] As Harman (1965) notes, IBE is the most recent version in long tradition of inductive inferential schemes for understanding scientific explanation. In the late nineteenth century, Charles Sanders Pierce developed the best known version of that tradition, which he called abduction.

would any other hypothesis, to the conclusion that the given hypothesis is true" (1965, p. 89). In other words, to claim that one hypothesis explains a phenomenon more adequately than competing hypotheses and therefore is true the competing hypotheses must be eliminated as being inadequate to explain the phenomenon. The elimination of competing hypotheses is based on the totality of available evidence: "Now, in practice we always know more about a situation than that all observed *A*'s are *B*'s, and before we make the inference [that all *A*'s are *B*'s], it is good inductive practice for us to consider the total evidence" (Harman, 1965, p. 90). Thus, only after considering the burden of all the evidence is one warranted to choose one hypothesis as a better explanation of a phenomenon than its competitors.[6]

Philosophers of science, especially of the realist stripe, use IBE to account for scientific explanation and theory confirmation and claim that IBE is the preferred means by which scientists formulate theories and hypotheses about the world that capture its reality. For example, in discussing Darwin's theory of evolution, Richard Miller insists that Darwin's concern was "whether the best available account of the data, however vague or incomplete, entails the superiority of the natural selection hypothesis over its current rivals" (1987, p. 165).

Other philosophers of science are less than sanguine about IBE. For example, IBE is not deductive, according to critics, but ampliative. Consequently, the best explanation could eventually be demonstrated as false. In other words, IBE suffers from the disadvantages of the induction problem. The best explanation may simply be the best of a "bad lot" of explanations (van Fraassen, 1989). The proponents of IBE assume a privileged position with respect to determining the best explanation and do not develop adequate criteria to establish that the best explanation is present in the competing set of explanations.[7]

Certainly the main issue with IBE is the development of a set of criteria that establishes one hypothesis as the best while the others are eliminated as not being the best. "By what criteria," demands Thagard, "is one hypothesis judged to provide a better explanation than another hypothesis?" (1978, p. 76). Although Harman (1965) acknowledges this problem, he does not discuss it other than to list several features of a good explanation, including simplicity, plausibility, explains more, and less *ad hoc*ness. Subsequent analysis by Harman and others, according to Thagard (1978), is insufficient to provide a commonly accepted set of criteria.

Thagard draws upon several scientific case studies in which a theory choice is made among competitors, to identify three criteria for determining the best explanatory hypothesis.[8] The first is consilience, which is "a measure of *how much* a theory explains, so that we can use it to tell when one theory explains *more* of the evidence

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[6] Harman developed further his notion of IBE in *Thought* (1973).

[7] Bas van Fraassen offers another critique of IBE in which he claims that the best theory may be simply one of an infinite set of theories that could account for the evidence and that it should be treated with indifference. For a defense of IBE *vis-à-vis* van Fraassen's criticisms, see Psillos (1996) and Ladyman et al. (1997).

[8] Thagard (1978) acknowledges that these criteria are neither necessary nor sufficient conditions for choosing the best explanation.

than another theory" (Thagard, 1978, p. 79). The next criterion is simplicity. Here the better explanation is less complicated or more economical and does not employ *ad hoc* modifications to account for additional experimental and observational evidence, especially evidence that disconfirms the preferred theory. The final criterion is analogy, in which the best explanation is analogous to other similar explanations. For example, Darwin's notion of natural selection shared similarities with the widely accepted explanatory account of artificial selection.

Alexander Bird (1998) provides several additional criteria for determining the best explanation, besides the ones listed above. The first is that the explanation may supply a precise mechanism that accounts for how a phenomenon works. As noted earlier, mechanisms are important for explaining how a phenomenon operates. Another important feature of a good explanation is its generality, akin to Thagard's consilience. In other words the hypothetical explanation has the ability to incorporate or unify a number of disparate facts and observations. A final feature is coherence. The best theory is the one that has "the ability to integrate or combine with other explanations" (Bird, 1998, p. 89). Certainly no one feature is adequate to account for the best explanation, but the explanation that exhibits the majority of these features is the most likely candidate for being the best. For example, Howard Temin's DNA provirus hypothesis was not accepted until the discovery of reverse transcriptase, which provided a mechanism for retrovirus replication, even though the hypothesis was not the most simple and certainly did not cohere with the central dogma of molecular biology (Marcum, 2002).

Peter Lipton (2004) proposes the most comprehensive notion of IBE to date. He focuses on contrastive explanations, in which there is a contrastive difference between the best explanation and its competitors. In other words, Lipton is concerned not with the question simply why this explanation is best but with the question why this explanation is best and another is not. He bases his notion on what he calls the "Difference Condition." This condition states that there is a causal difference between the acceptance of one hypothetical explanation and the rejection of another, i.e. the best explanation contains a causal factor absent from the other explanations. In other words, the best explanation has a causal contrastive edge over other explanations.

Lipton's version of IBE shares certain similarities with John Stuart Mill's "Method of Difference." According to Mill, a causal agent can be identified as the difference between two situations. In other words, if a person comes down with food poisoning and was the only one among a group of people who ate lobster bisque, with everything else equal, then the lobster bisque explains why the person came down with food poisoning. Lipton claims that his version of causal contrastive explanation accounts for inferring unobserved causes and the selection of one hypothetical explanation in the face of multiple differences.[9]

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[9] Steven Rappaport (1996) argues that Lipton's original version of IBE published in the 1991 edition of the book is "identical" to Mill's method of difference. Lipton (2004, pp. 126–128) claims, however, that Mill's method could not establish the causal contrast.

The method of IBE, according to Lipton, involves two steps. First, there is the generation of potential inferential hypotheses to explain a phenomenon. Only a limited number of hypotheses can be generated, because of an "epistemic filter" that selects only for the plausible explanations. Lipton is not so much concerned that the best explanation accounts for all the evidence, although this is important, but that it has a contrastive edge over the others. That edge is often obtained when the best explanation accounts for novel predictions, while its competitors do not. The second step then involves the selection of the best explanation. Selection of the best explanation depends on its "loveliness" and not necessarily on its "likeliness." The loveliest explanation is the one that provides the "most understanding," while the likeliest explanation is the "most warranted" (2004, p. 59). What makes one explanation lovelier than another is its explanatory virtues of simplicity and unifying power, and elucidation of causal mechanisms.

Lipton illustrates his version of IBE with Ignaz Semmelweis' research during 1844 to 1848 to explain an increased mortality of woman from childbed fever in one maternity ward of the hospital as compared to another. At first Semmelweis considered hypotheses based on current notions of "epidemic influences" and other plausible hypotheses concerning diet or general care, but rejected them for one reason or another. Comparison of the two wards, however, revealed that medical students attended patients in the high mortality ward. Semmelweis proposed several hypotheses to account for this observation, such as medical students' rougher handling of patients. Again, he eliminated these hypotheses. The chance occurrence of a colleague's death from an illness similar to childbed fever, after puncturing himself during an autopsy, led Semmelweis to hypothesize that medical students are contaminating birthing mothers with cadaver material. Simply having the medical students wash their hands before examining patients reduced the mortality rate to that of the midwife ward.

According to Lipton, the Semmelweis case study is a "gold mine" for supporting IBE. "By tailoring his explanatory interests (and his observational and experimental procedures) to contrasts that would help to discriminate between competing hypotheses," argues Lipton, "Semmelweis was able to judge which hypothesis would provide the best overall explanation of the wide variety of contrasts (and absences of contrasts) he observes, and so to judge which hypothesis he ought to infer" (2004, p. 81).

8.4 Functional Explanations

According to Larry Wright (1973), function is an ambiguous term with a "spectrum of meanings." However, function is usually defined philosophically in teleological terms as an activity or action that fulfills a specific goal or purpose. Hence, function is a performance concept oriented to the execution of an objective. Berent Enç symbolizes functional sentences accordingly: "the function of *X* is to do *Y*" (1979,

p. 344).[10] For example, the function of the heart (*X*) is to pump blood (*Y*). In this example, the heart's purpose or goal is to circulate blood throughout the body by pumping it. Moreover, the heart's structure is such that it contributes to its function as a pump. Functional statements, such as the heart pumps blood, raise additional questions, such as why does the heart pump the blood or how does the heart pump blood, and such questions require an explanation.

"Functional explanation," according to Huib de Jong, "often takes the form of decomposition of complex systems. This consists," he continues, "in describing a system in terms of what it does, and then explaining its behavior in terms of what it is" (2003, p. 292). In other words, a particular function is explained in terms of its structure. For the heart pumping blood example, the heart circulates blood because it is a pump. The how question is answered by detailing the structure of the heart and its muscular and nervous composition. Enç provides another formulation for functional explanations: "*X* does *S* in order to (so as to) do *Y*" (1979, p. 344). For the example of the heart pumping blood, the heart (*X*) pumps blood (*S*) in order to feed the body's tissues (*Y*).[11] It is the "in order to" that serves as the linguistic feature to answer the why question.

Functional explanations are particularly common in biology and psychology, especially given the complexity of biological organisms and their behavior. Ernest Nagel (1977) identified four types of function that inform functional explanations in these disciplines. The first is a teleologically neutral function, in which the notion of function has no connotation of purposeful action. Rather, function is expressed simply in terms of "biological role" and represents a property of an organism given its structure. Explanations based on this notion of function are expressed in terms of the structure-function relationship and are akin to those found in physics and chemistry. For example, the kidney filters the blood to remove metabolic waste (biological role) because of the glomerulus' capillary fenestrations (structure).

The second type is "selective agency" function, in which activities "are directed by purposive agents toward achieving selected ends" (Nagel, 1977, p. 280). This type of function is based on an analogy between human and nonhuman activity or behavior. In other words, a particular activity or behavior is selected because it performs a particular function in the organism's economy. This represents a "metaphorical extension" from human, conscious functioning to nonhuman, unconscious functioning. Explanations based on selective agency have the same pattern as those for conscious ones. Thus, a function is selected in an organism "for the sake of" the effects that function carries out for the organism. For example, the filtering function of the kidney was selected in vertebrates for the sake of removing metabolic wastes from the organism's blood.

The third type is "heuristic" function, in which function is perceived "as if" it were a product of design. According to its proponents, "a process cannot properly

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[10] Enç (1979) makes an interesting assertion that functions attributed to activities and processes often represent the methodological constraints used to formulate explanatory hypotheses.

[11] Of course, this formulation can also be used to answer the how question: the heart (*X*) contracts (*S*) in order to pump blood (*Y*).

be characterized as purposive, if it can be explained on the basis of physicochemical laws, and that the effect of an organic process can count as one of its biological functions only if that process was *intended* or *designed* to produce the stated effect" (Nagel, 1977, p. 290). In other words, the ascription of function to nonhuman organisms is not to be taken literally but as a "regulative" principle or maxim in guiding research. Functional explanations represent statements about the particular activity of an organ or organism in terms of design function. For example, the kidney functions to filter blood of metabolic waste as if designed to accomplish this function.

Because each of the preceding types of function has a fatal defect that renders the explanatory scheme based on it suspect, Nagel championed a fourth type called "goal-supporting" or "welfare" function, in which "functional statements not only presuppose that the systems under discussion are goal-directed, but also that the function ascribed to an item *contributes* to the realization or maintenance of *some goal* for which the system is directly organized" (1977, p. 296). This type of function lends itself to a more general explanation that incorporates the overall goal or advantage of the function *vis-à-vis* the organism's flourishing. For example, the function of an organism's kidney within an environment of limited diffusion capacity is to remove metabolic wastes, so that the organism can maintain blood chemistry conducive to life.

Alex Rosenberg challenges the notion of functional explanations in biology. "The apparent generalizations of functional biology," according to Rosenberg, "are really spatio-temporally restricted statements about trends and the co-occurrence of finite sets of events, states and processes" (2001a, p. 148). In other words, functional explanations do not represent natural laws but rather descriptions that are contingent upon local conditions and the Darwinian law of natural selection.[12] For example, the functional explanation traditionally given for the buckeye butterfly's eyespots is that they detract potential predators. However, the "functional individuation of biological kinds reflects the vagaries and vicissitudes of natural selection, since biological kinds are the result of selection over variation in order to solve design problems set by the environment" (Rosenberg, 2001a, p. 148).

Marc Lange (2004) takes issue with Rosenberg and claims that functional explanations cannot be simply reduced to local contingencies and the natural selection law. For example, he cites that "medicine does not take human evolutionary history as a variable" when explaining why a patient who smoked died of lung cancer (2004, p. 107).

8.5 Narrative Explanation

Compared to the logical, scientific explanatory schemes, the notion of narrative explanation seems problematic. "Our common sense notions of narrative and explanation," according to Jon-K Adams, "are so far apart that they appear incompatible:

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[12] "Biological explanation is historical explanation," claims Rosenberg, "in which the implicit laws are the principles of natural selection" (2001a, p. 148). For Rosenberg (2001b), Hempel's covering law scheme is adequate to account for biological explanations.

narrative tells what happened; explanation makes plain or comprehensible" (1996, p. 110). However, narrative represents a primitive or basic form of explanation compared either to commonsense or scientific intuitions. Through stories, events are structured cohesively so as to covey meaning, purpose, significance, and understanding to them. In other words, the events are made intelligible. Narrative often represents a powerful way by which to answer why questions, especially why an event has occurred, through the purposeful and intentional configuring of preceding events by a narrator such that the event to be explained appears to be a natural consequence of the narrative.

Based on the connection of preceding events with the event to be explained, Adams configures the structure of narrative explanation in Hempelian terms of an explanandum, the event to be explained, and the explanans, the sequence of events that precede the explanandum. "The logic of narrative explanation," claims Adams, "lies in the assumption that a sequence of events explains a single event by leading up to it" (1996, p. 110). Thus, the narrator assembles the events that precede the event to be explained in order to bring about an understanding of it. Importantly, explanatory stories can be told not only by an individual narrator but also by a society in which its individual narrators reside. Indeed, the stories that society often narrates are important in terms of defining its members and accounting for their positions and functions within it. Often these stories can be healthful, but they can also be destructive and harmful—not only to the health of a society's members, but also to the society as a whole.

Narrative explanations are especially important in history. Whereas scientific explanations are abstract in nature, in which a story's historical details are bracketed, narrative explanations take into account full historical details. Without these details, narrative explanations are sterile and fail to make adequate sense of the events being told or examined. According to the historian Paul Roth, narrative explanations supply "an account of the linkages among the events as a process leading to the outcome one seeks to explain" (1988, p. 1). An issue surfaces as to what constitutes the connection among the events to be explained. For scientific explanations, that connection or linkage is supplied by the invocation of universal natural laws. However, historians traditionally do not invoke universal laws.

In an attempt to shore up the soundness of historical explanations, Hempel proposed an explanatory scheme for historical events that includes general laws or universal hypotheses. In contrast to "the method of empathetic understanding," in which a historian "imagines himself in the place of the persons involved in the events which he wants to explain," Hempel proposed a logical structure for historical explanation analogous to that for explanation in the natural sciences that include general laws and initial conditions (1942, p. 44). Although Hempel's proposal did influence some historians, others objected to it. For example, William Dray argued that "in history, the demand for explanation is very often interpreted in such a way that the proper answer assumes narrative form" (1954, p. 17). At issue for Dray is the possibility of the event's occurrence and not its necessity.

Roth (1988) addresses two general objections, especially in terms of positivism, to narrative explanation in history. The first is methodological in nature and claims that narrative explanation is concerned with particular not universal events and thereby cannot invoke laws to justify or legitimate the explanation. Roth believes that this criticism is "misguided" and fails to account for other means of explicating explanatory schemes. Rather, he challenges this criticism and argues that narrative explanation could provide an alternative to the standard scheme if "enough formal properties of narrative accounts [are discovered] to establish how such explanations are viable candidates for objective evaluation" (1988, p. 4).

The second objection is epistemological in nature and concerns "how to verify a narrative" (Roth, 1988, p. 2). Roth claims the objection that narrative explanations are not verifiable in the traditional sense and cannot distinguish between fiction and nonfiction is founded on a correspondence theory of historical knowledge as true. Although he acknowledges that such knowledge is constrained by the facts, he challenges whether categories of truth or falsity are appropriate for evaluating narrative explanations. Roth argues that the notion of an objective narrative is not a coherent notion since "there are no ideal events to chronicle" (1988, p. 8). Rather, an objective, ideal account of history implodes from the fact that the human narrator's perspective cannot be excluded from the narrative.

Since truth is an inappropriate category for assessing narrative explanations, the question arises as how best to assess them. David Velleman (2003) proposes that goodness of the story is the relevant criterion. What makes for a good story or narrative is its ability to organize the various seemingly disconnected events into an intelligible whole. This involves practical reasoning, which connects what one can do with what one understands. The reasons supplied by practical reason *vis-à-vis* narrative operate explanatorily by setting the context, especially an emotional rather than a causal context. According to Velleman, understanding often occurs at a visceral or bodily level. A good story then taps into an emotional understanding that gives narrative its explanatory power. However, the emotional understanding achieved through narrative is not in contrast to causal understanding but is complementary to it, in an attempt to understand events both emotionally and causally at the same time.[13]

Mark Bevir (2000) also defends narrative explanation from positivistic criticism, which attempts to assimilate historical explanations into scientific explanations. The general scheme of narrative explanation consists of relating beliefs to pro-attitudes: "an action X was done because the agent held beliefs Y according to which doing X would fulfill his pro-attitude Z" (Bevir, 2000, p. 13). Two types of connecting relate beliefs to pro-attitudes in narrative explanations. This first is a conditional connecting, which "relate agents" beliefs and pro-attitudes to one another so as to make sense of the fact that they thought an action would fulfill one or more of their pro-attitudes" (Bevir, 2000, p. 14). This connecting is not causally necessary but it is also not arbitrary in that a theme or idea of a principal actor based on certain beliefs and pro-attitudes does preside in the historical event which the

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[13] Velleman (2003) rightly points out that narrative explanation can suffer from a "projective error," in which the narrator projects the end onto the preceding events in order to justify the end.

historian can identify. The second connecting is volitional, which "enables us to make sense of the fact that agents moved from having pro-attitudes to states of affairs to intending to perform actions and then on to acting as they did" (Bevir, 2000, p. 15). This connecting depends not on a reduction of behavior of mental and volitional states to brain states but to folk psychology.

Historical narrative explanations are distinct from fiction, because historians can deliver the facts (Bevir, 2000). In other words, historians can offer epistemically legitimate narratives that unpack themes revolving around beliefs, actions, and pro-attitudes because facts are not simply given through pure perception but are always embedded in prior concepts supplied by folk psychology. Even scientific explanations must rely on facts that are embedded in prior concepts supplied by what consensus declares are reasonable theories and concepts. "A rejection of naïve positivism," according to Bevir, "implies that the past does not present itself to historians as a series of isolated facts upon which they then impose a narrative so as to bring the facts to order. Rather," he continues, "the past, like all experience, presents itself as an already structured set of facts" (2000, p. 18). In other words, a historical event already exhibits a narrative structure.

Narrative explanation has also been used in humanistic approaches to clinical medicine. "For all the science that underpins clinical practice," observes Glyn Elwyn and Richard Gwyn, "practitioners and patients make sense of the world [of illness] by way of stories" (1999, p. 186). The question is "whether fitting symptomatic behaviors into a life-story adds to the understanding gained by fitting them into diagnostic categories" (Velleman, 2003, p. 1). For many humanistic practitioners, the answer to that question is a resounding yes. The patient's personal and historical information or story is imperative for a full understanding and explanation of the patient's illness experience, in order to make an accurate diagnosis and to provide an effective therapy.

Whereas explanations within the biomedical model are in terms of abstractions, within the humanistic or humane models explanations are made in terms of instantiating the abstract with historical and personal details. Moreover, the scope of explanations for the biomedical model is the physical (even the mental is reduced to the physical) while for the humanistic models it must include the nonreductive mental and the social and even the spiritual. The humane clinician's task, then, is to obtain the patient's story or narrative of the illness experience, in order to explain it fully.

8.6 Summary

Explanatory schemes are an important component of medicine in general, but particularly to the biomedical model. For the biomedical practitioner these schemes represent a variety of approaches to account for the intelligibility of medical phenomena, which are dependent upon the explanatory schemes developed for the natural sciences. Objective or brute facts and theories are critical for explaining a phenomenon, such as a patient's disease state.

Although biomedical explanatory schemes are important for designing intelligent and effective therapeutic modalities, they have fueled the quality-of-care crisis. Patients feel that biomedical practitioners are only interested in diagnosing the physical disease and prescribing a treatment plan to cure it, but they do not feel that physicians are concerned about the existential impact of the disease upon their lives. Humane practitioners champion narrative explanation to address this complaint. Through narrative, the physician can access information not only of the patient's existential dimension of the illness experience but also information about the unfolding of the disease state. Utilizing narrative explanation, humane practitioners search for a comprehensive account of the patient's illness in order to bring wholeness back to the patient's life. This is particularly important if the patient is suffering from a chronic or terminal illness.

Chapter 9
Diagnostic Knowledge

"There are two modes of cognitive functioning, two modes of thought," according to Jerome Bruner, "each providing distinctive ways of ordering experience, of constructing reality" (1986, p. 11). The two modes of cognitive functioning are paradigmatic or objective and narrative or subjective.[1] They represent distinct kinds of knowing and are not only irreducible to each other but are also complementary to one another. The first mode of knowing, paradigmatic—Bruner's preferred term—"attempts to fulfill the ideal of the formal, mathematical system of description and explanation. It employs," he continues, "categorization or conceptualization and the operations by which categories are established, instantiated, idealized, and related one to the other to form a system" (1986, p. 12). Paradigmatic knowing depends upon empirical verification and rational skills to develop a sound argument.

Narrative knowing, however, "deals in human or human-like intention and action and the vicissitudes and consequences that mark their course. It strives," Bruner claims, "to put its timeless miracles into the particulars of experience, and to locate the experience in time and place" (1986, p. 13). It is concerned with a good story that reveals the human condition. Sarah Worth (2008) substitutes the term "discursive" for Bruner's term paradigmatic or logico-scientific, because discursive depicts best the immediateness or directness of reasoning and knowing. In this chapter, her terminology is adopted.

According to the Oxford English Dictionary, diagnosis is derived from two Greek words: *dia*, which means through or by, and *gnosis*, which means to know or learn. Diagnostic procedures, then, are epistemic means through or by which the physician gains knowledge or learns of the patient's disease state. Following the consensus that knowing is of two modes or types, diagnostic knowledge is divided into discursive (objective) and narrative (subjective). Discursive diagnostic knowledge is obtained through biomedical diagnostic procedures of the medical interview, physical examination, and laboratory tests and procedures, as discussed in Chapter 5. Narrative diagnostic knowledge is obtained through the patient's story of the

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[1] Donald Polkinghorne (1988) also distinguishes, along similar lines to Bruner whom he references, between two forms of reasoning. As for narrative reasoning, he argues for the organization of narrative sentences that report actual events around a plot structure.

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disease symptoms or the illness experience. Both types of diagnostic knowledge are important for determining the patient's disease state.

However, the epistemological question arises as to how certain can a clinician be concerning the information obtained from these diagnostic attempts to understand the patient's disease state or illness experience. In this chapter, the epistemological issues associated with the traditional means of obtaining clinical information through the medical interview and physical examination and through humanistic modifications particularly in terms of the patient's story or narrative are explored. Finally, discursive diagnosis obviously exacerbates the quality-of-care crisis while nattative diagnosis attempts to mollify or even to resolve it.

9.1 Discursive Diagnostic Knowledge

Traditional forms of knowledge are based on discursive reasoning, which asks questions over knowing the "how" or the "that" (Worth, 2008). Such reasoning is logical (inductive or deductive, but not abductive) in nature. It depends upon rational argumentation, in which the connections between the premises and conclusion are formal. Biomedical practitioners obtain diagnostic knowledge through the medical interview and the physical examination, as well as laboratory tests.

William Osler (1849–1919), the Regius Professor of Medicine at Oxford University, laid the foundation for modern clinical diagnosis in the early twentieth century, by emphasizing the pathological analysis of the patient's symptoms. His predecessor, Archibald Garrod (1857–1936), known for his work on inborn error of metabolism, advanced Osler's diagnostic approach to include the patient's biochemical constitution. Today, the patient's genetic make-up is also an important component of the diagnostic procedure. In this section, the epistemological issues associated with the biomedical model of diagnostic procedures for the medical interview and physical examination are discussed, especially in terms of the generation and justification of diagnostic hypotheses and of medical errors.

9.1.1 Generation of Discursive Diagnostic Knowledge

Murphy (1997) provides a comprehensive analysis of the diagnostic process, especially for the biomedical model, in terms of strategy, actual tactics, and logic behind it. The strategy of the diagnostic process consists of two main objectives: classification and measurement. Classification refers to the categorization of disease states, regardless of variation in the expression of the disease's manifestation within a patient, while measurement pertains to the quantification of a patient's symptoms. The goal of biomedicine is to provide adequate measurement of a patient to secure diagnostic accuracy and certainty. The tactics of the diagnostic process entails the means utilized to obtain the facts of the disease state. Finally, the logic of diagnosis involves the process of how facts are utilized or interpreted to determine a patient's disease state or to make a diagnosis. Importantly, the diagnostic process comes to a conclusion, "when any further data the diagnostician might seek are either *redundant* or *irrelevant*" (Murphy, 1997, p. 311).

The knowledge of a patient's disease state is initially obtained from the symptoms expressed by a patient. These articulated symptoms provide a physician with information necessary to formulate questions about the patient's disease state. Many of these questions are answered by observing the clinical signs of the disease. The signs observed by a physician form the basis for hypotheses formation in terms of diagnosing a patient's disease state. Moreover, clinical signs are particularly important for evaluating diagnostic hypotheses. "The signs serve," according to Coulehan and Block, "to confirm or disconfirm the hypotheses that we are beginning to develop from the history, or perhaps the results of the examination will suggest entirely different hypotheses" (1992, p. 126). Signs, and to a lesser extent symptoms, play a vital epistemological role not only in generating but also in establishing diagnostic knowledge.

Once the medical history and the physical examination are complete, the physician may formulate a list of possible diagnoses. Based on this list, additional medical tests are conducted to gather more data concerning a patient's disease state. "A valid, relevant, and appropriate set of hypotheses is critical for the next sequential steps in the process," claim Kassirer and Kopelman, "namely gathering and interpreting further information and selecting the appropriate diagnostic tests" (1989, p. 34). The results of these tests allow a physician to make a differential diagnosis, the process by which the physician entertains the possible diseases to account for the clinical data. The generation of a differential diagnosis is equivalent to the scientific method by which a scientist makes a tentative hypothesis and then tests it experimentally. The experimental results are used to determine validity of or to justify a particular hypothesis.[2] In like manner, physicians gather initial clinical data and form tentative diagnoses and then proceed with clinical tests to determine which diagnosis is correct or justified.

The generation of clinical hypotheses is a process that is not well understood.[3] Kassirer and Kopelman (1989) narrate a case study in which a physician was given sequential clinical data on a fifty-two year-old male, who smoked one pack of cigarettes a day for thirty years and drank 1 pint of alcohol a day for twenty years. The patient's presenting symptom was a progressive weakening over the past three

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[2] One of the chief issues in the philosophy of science is the justification of scientific theories or hypotheses. Traditionally, the logical positivist Reichenbach calls this the notion of the context of justification. But the notion is widely debated, since many theories are not justified or determined by the experimental evidence but underdetermined.

[3] The generation of scientific hypotheses and theories is also not well understood. Traditionally, it is part of what Reichenbach calls the context of discovery. For the logical positivists and their decedents, the discovery or generation of hypotheses and theories is best left to psychologists and not to philosophers.

months of his right arm and leg. The physician generated 28 hypotheses to account for the symptoms based on cigarette smoking and alcohol consumption, with the 21st hypothesis, a cerebellar mass, being confirmed after brain surgery.

Kassirer and Kopelman make several important observations concerning factors involved in hypothesis generation for clinical diagnosis. The most influential factor is the heuristic cue, which in this case was the patient's alcohol and cigarette use. Another important factor is a physician's own training. As Kassirer and Kopelman report, "studies show that when physicians generate diagnostic hypotheses, they do so by recalling those disease processes most prevalent in their own institutions" (1989, pp. 33–34). Certainly what a physician learns previously about a heuristic clue, especially a clue like cigarette smoking, predisposes formulation of hypotheses focused on a specific class of diseases like cancer.

Coulehan and Block (1992, 2001) propose a feedback loop mechanism for understanding the medical interview, as well as the generation and justification of medical hypotheses. The process begins with a patient articulating the chief complaint, followed by a clinician's questions concerning the history of the present illness. As an exchange takes place, the physician begins to generate hypotheses based on the information. Generally the number of possible hypotheses is rather enormous at the early stages of the process. As the physician learns more about the patient through the medical interview, including the family and social histories, the feedback of information begins to restrict the field of hypotheses to a select few. As more information is obtained through the feedback loops of "technique" and "content," a short list of hypotheses is arrived at that is then compared to results obtained from physical examinations and laboratory tests. Coulehan and Block cite with approval Alvan Feinstein's comparison of medical diagnosis to scientific experimentation, except they recognize that physicians cannot change one variable at a time as scientists can do.

Relying on Platt and McMath, Coulehan and Block (1992, 2001) identify four different types of medical hypotheses. The first type of hypothesis, the disease hypothesis, which the physician formulates, is about the diagnosis *vis-à-vis* the disease. As noted earlier, the physician's task is to generate a differential diagnosis that ultimately leads to the identification of the patient's disease state. Related to the disease hypothesis is the narrative hypothesis that the physician formulates about the patient's story. Does the story cohere in a rational sense? In other words, do the various parts of the medical interview fit together in terms of what the physician knows about various diseases? Can a causal relationship emerge from the symptoms the patient relates about the history of the present illness and other parts of the medical interview? Central to the hypothesis the physician formulates about the patient's story is the hypothesis the physician formulates about the patient's character. Can the patient be trusted to give an accurate account of the illness experience? Will the patient be compliant? Finally, the physician formulates a hypothesis about the medical interview itself in terms of possible errors and problems inherent to it. These hypotheses are critical for developing accurate clinical knowledge about the patient.

9.1.2 Justification of Discursive Diagnostic Knowledge

A critical epistemological issue with clinical knowledge obtained from medical interviews and physical examinations, as well as from laboratory tests, is its accuracy. Kassirer and Kopelman define accuracy as "the correspondence between a finding and the true state of the entity or phenomenon it is describing" (1991a, p. 29). For medicine, problems arise with the accuracy of clinical information, since such information is obtained from clinical interviews and examinations which depend on the patient's accuracy. Unfortunately, the patient's accuracy can be distorted by bias and faulty memory.

Kassirer and Kopelman propose that accuracy should be appraised in terms of the information's validity, which depends on several contexts. The first is "face" validity, in which the physician's intuitions support the information's accuracy. The next two are "construct" and "criterion" validity, in which the information represents a functionally consistent value and can be compared to some known standard, respectively. The final is "content" validity, in which "the datum is representative of the item being assessed and adequately embodies all the dimensions of the item being measured" (1991a, p. 29).

The validity of clinical knowledge obtained from diagnostic procedures also raises the issue of criteria for justifying such knowledge. Kassirer and Kopelman (1991a) provide nine criteria or guidelines to address this issue. These guidelines include the exercise of caution when relying on past medical information, especially previous diagnoses that may be based on insufficient clinical data. Another important guideline is to ask detailed questions concerning the patient's personal habits, especially those involved in illicit drug and promiscuous sexual behavior. Physicians must also be wary of a patient's bias and distorted memory.

Social factors are also important. For example, Kassirer and Kopelman (1991a) report a case history in which a female patient lied about her identity in order to obtain medical care by using a cousin's Medicaid card. Because the patient lied about her identity an accurate diagnosis was delayed. Moreover, a patient should properly understand the questions, especially with the physician avoiding unnecessary jargon. Finally, questions must not lead a patient to give misleading answers; rather, physicians should "allow patients to present the story of their illness in a free narrative fashion" (Kassirer and Kopelman, 1991a, p. 29).

Clinical judgment *vis-à-vis* diagnosis of a patient's disease is dependent not on a complete collection of the patient's symptoms and signs but on an adequate collection. "Clinicians never have," according to Coulehan and Block, "all the data that may be relevant to a given illness or disease situation or a given patient. There is always something left out," they insist, "and all diagnostic and therapeutic decisions are made in the context of some uncertainty" (1992, p. 283). Uncertainty is simply part of medical practice, given the variability of the underlying biology.

The joining of medicine to the biological sciences and the other natural sciences, however, represents an effort to minimize the uncertainty of medical practice (Botkin, 1992). But the issue is how to join the universals that make up science with a particular patient to provide a sure diagnostic or therapeutic analysis. "Despite an enormous number of reliable, well worn diagnostic and therapeutic paths," observes Hunter, "there is never enough certitude" (1991, p. 30). However, the physician is obliged to act even in the face of such uncertainty.[4]

Besides the incompleteness of medical information gathered by a physician concerning a patient's disease condition, errors are also committed during a medical interview. These errors can have drastic consequences in terms of diagnostic accuracy and, of course, with respect to patient care. For example, medical error is the eighth leading cause of death in the US (Zhang et al., 2004).[5] Diagnostic errors have been categorized according to several different taxonomies.[6] For example, Jiajie Zhang and colleagues utilize an action-based cognitive taxonomy to categorize medical errors at the level of the individual physician and of the physician's interaction with medical technology.[7] According to them, "medical error is a cognitive phenomenon because it is an error in human action which is a cognitive activity" (Zhang et al., 2004, p. 194). In other words, an error is the failure to obtain a planned outcome not due simply to chance.

Zhang and colleagues divide medical errors into two broad categories: slips and mistakes. Slips "result from the incorrect execution of a correct action sequence," while mistakes "result from the correct execution of an incorrect action sequence" (Zhang et al., 2004, p. 195). For example, a mistake occurs because of incomplete knowledge whereas a slip occurs because of a failure to perform correctly even with adequate knowledge. Both slips and mistakes are divided into execution and evaluation subcategories. Evaluation slips and mistakes are further divided according to goals, intentions, and action specification and execution. Execution slips and mistakes are also further divided according to perception, interpretation, and action evaluation.

Jerome Groupman (2007) provides a list of medical errors, based on biases and prejudices, which often keep a physician from making the proper diagnosis. These errors include representativeness errors, attribution errors, and affective errors. The first type of error results from thinking in terms of a "prototype." For example, a

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[4] Because of the inaccuracy and incompleteness of the clinical data, often the various hypotheses formulated during differential diagnosis are ranked probabilistically rather than simply exhaustively. Kassirer and Kopelman recommend that the list be formed or "ordered according to the likelihood that a patient with all the clinical findings observed has each disorder" (1990, p. 24). The correct or best diagnosis would then be determined through Bayesian analysis.

[5] The reduction of medical and diagnostic errors is an important area of concern among physicians and several proposals have been made to that end (Croskerry, 2003).

[6] Coulehan and Block (1992) identify five types of errors, including physician's ignorance of necessary information, the inadequacy of present medical knowledge, the probabilistic nature of biological phenomena, the physician's violation of a patient's trust, and the physician's use of flawed logic or reasoning. Taxonomies of medical errors are also available for specific medical specialties (Graber et al., 2005; Sirota, 2005).

[7] Zhang and colleagues also recognize various levels, on a hierarchical scale, at which medical errors can be made, including levels of distributed systems made of different groups of individuals, organizational structures due to miscommunication or faulty organizational memory, institutional functions in terms of policies and guidelines, and national regulations in which there is failure to assure quality control.

patient's fit and trim physique may keep a physician from considering chest pains as indicative of a heart attack. The next error is based on a "negative stereotype," in which a physician notices a possible deleterious lifestyle behavior and then attributes diseases to the patient common to this lifestyle. For example, abdominal pains in a patient with alcohol on the breadth may be attributed to liver cirrhosis. The final error is based on the physician's desire to avoid diagnoses of fatal diseases for well liked patients.

9.2 Biomedical Technology

Contemporary medical knowledge, with respect to its generation and justification, is also technology dependent. It is generated and justified by the technical devices employed to examine and investigate the patient's disease state and therapies to relieve that state. According to Le Fanu (2002), three groups of technical advances, including life sustaining, diagnostic, and surgical, are critical for the rise and development of modern medical knowledge. Of these three, diagnostic technology provides the most spectacular clinical knowledge of patient's body and disease state. For example, imaging technology makes the body almost transparent to the clinical gaze. What was once shrouded in darkness and mystery is now made bright and commonplace. "The brain, thanks to the CT and MRI scanners," exclaims Le Fanu, "can now be seen with a haunting clarity, while the fetus that previously grew hidden from view within the womb can, thanks to ultrasound, be observed virtually from the moment of conception" (2002, pp. 187–188). These technologies are nonpareil in terms of the knowledge they provide of both the patient and the disease process.

Although medical imaging technologies apparently make the body transparent, "their ubiquitous use renders the interior body more technologically complex" (van Dijck, 2005, pp. 3–4). The complexity associated with the notion of transparency is not unproblematic, however, for the interior of the body is mediated by these imaging technologies. Transparency is a "layered" notion, in which the ground layer is certainly the ability to take a look. But, the other layers include additional information and the ethical issues it raises. This information makes the interior of the body simply more than a transparent object but rather a cultural object. "The transparent body," according José to van Dijck, "is a complex product of our culture—a culture that capitalizes on perfectibility and malleability" (2005, p. 5).

Medical technology is also influential in terms of enhancing diagnostic accuracy. It provides the means for collecting objective evidence and observations concerning the patient's disease so as to make a precise and accurate diagnosis, especially in terms of the machines used to conduct tests on the patient's vital fluids. These machines are employed to produce the objective data that is considered free of human biases. "From the beginning of their introduction in the mid-nineteenth century," claims Reiser, "automated machines that generated results in objective formats such as graphs and numbers were thought capable of purging from health care the distortions of subjective human opinion" (1984, p. 18).

According to humanistic or humane practitioners, however, medicine is still a very human affair, regardless of its technical development and sophistication. Although technology can help to increase diagnostic accuracy during a physical exam, it cannot guarantee it. For example, a physician's presuppositions as to the diagnosis can often interfere with making a correct diagnosis (Voytovich et al., 1985).

Kassirer and Kopelman (1991b) discuss the troubles associated with a clinical case, in which the attending physicians presumed a patient's disease was caused by liver malfunction. The patient was a thirty-seven year-old female with a history of ascites and anasarca. Her presenting symptom was leg edema. The initial differential diagnosis included kidney, liver, and heart diseases. The focus of the attending physicians was on the liver, but laboratory tests on urine and blood were inconclusive and a liver biopsy revealed no grossly abnormal, anatomical structure. Finally, echocardiography revealed the patient was suffering from mitral valve stenosis.

In their comments on this case, Kassirer and Kopelman disclose that the patient not only complained of edema as the presenting symptom but also of breathlessness. Moreover, distended neck veins and cardiac murmurs were obvious clinical signs. Why did the attending physicians fail to recognize the importance of these symptoms and signs? Kassirer and Kopelman claim that the attending physicians presumed liver disease based on the patient's history.[8] Their recommendation is that physical examinations "must be carefully tailored to the disorders in the patient's differential diagnosis" (1991b, p. 25).

With the development of medical technology, clinical knowledge, in terms of concepts like disease and health, life and death, has become better defined. For example, prior to the introduction of Laennec's stethoscope debate raged over the clinical determination of death. After the stethoscope, cessation of the heart beat became the standard for defining death (Jennett, 1986). But this definition was inadequate for an increasing number of patients who were comatose and were sustained by a respirator and intravenous nutrition.[9] By mid twentieth century, with the rise of another technology—organ transplantation—death was redefined again using another technology. In 1968, an *ad hoc* Harvard committee redefined death in terms of the cessation of brain activity, known as "brain death," as measured by electroencephlography (Giacomini, 1997). The committee's concern was to provide a definition of death so that organs could be harvested for transplantation, from comatose patients.

Later, in the early 1980s, a President's commission on medical ethics defined death in terms of the whole brain: "irreversible cessation of all functions of the entire brain, including the brain stem" (President's Commission, 1981, p. 2). However, the notion of "whole brain death" was also problematic. For example,

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[8] Kassirer and Kopelman note that one of the attending physicians who suspected a cardiac problem bemoaned that "20 or so years ago the diagnosis would not have been missed. Mitral valve stenosis was a much more prevalent disease then, and careful cardiac auscultation was rigorously practiced" (1991, p. 21).

[9] See, e.g., the Karen Ann Quinlan case in the mid 1970s (Colen, 1976).

patients declared whole-brain dead still exhibit physiological activity such as evoked potentials and neurohumoral activity. To resolve these problems, some researchers proposed a definition of death based on higher functions of brain activity. Youngner and Bartlett (1983), for instance, argued that a general notion of brain death is inadequate and should be replaced by a more precise definition that focuses on the loss of cognitive functions.[10] Finally, Thompson and Cozart (1981) resisted the technical definitions of death such as brain death and argued for a humanistic notion of death that transcends the technical to include the moral.

Finally, Cassell (1997) argues that technology produces several insidious problems for modern medicine.[11] Specifically, these problems center around the inappropriate use of technology therapeutically, especially life support technology, as well as unwarranted use diagnostically, especially ordering laboratory tests not germane to the patient's symptoms. These problems reflect around a half-dozen features of human nature, such as our fascination with gadgets, our inability to tolerate any ambiguity or uncertainty, and our desire for power and control. The underlying issue is that we become enslaved to our technology. "Technologies come into being to serve the purposes of their users," observes Cassell, "but ultimately their users redefine their own goals in terms of the technology" (1997, p. 63). For medicine, technology often redefines its goals from a patient's suffering from an illness to a patient's pain associated with a diseased body part.

9.3 Narrative Diagnostic Knowledge

Narrative, as noted earlier, is a powerful means for explaining and organizing the world and its events.[12] The Latin word for narrative, *gnarus*, is derived from the Sanskrit root, *gna*, which is also the root for the word *gnosis* or knowledge. In a sense, narrative structures the world. "We live in a world," according to Gary Morson, "in which narrative is essential" (2003, p. 59). Without narrative the world lacks a cohesive wholeness or unity, in terms of its ethnographic complexity (van Maanen, 1988). The structuring that narrative provides the story's plot serves as the focal point around which the temporal sequence of events coalesces and is organized. The plot, rather than logic or causation, functions to connect the events.

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[10] Others have made similar arguments, see, e.g. Machado (1994), Truog and Fackler (1992), and Veatch (2005).

[11] Cassell recognizes that medical technology can refer to many different devices from scalpels to MRI scanners, but he limits this technology "to modalities and instrumentalities that greatly extend the power of human action, sensation, or thought independently of their user" (1997, p. 63).

[12] Kreiswirth (2000) claims that towards the end of the twentieth century, the human and natural sciences under went a narrative—he prefers narrativist—turn. This turning represents a culmination of earlier turnings, including the linguistic, rhetorical, interpretative, and historical turns. "The process here is one not of univocal serial displacement," warns Kreiswirth, "but of dialogic refinement and mutual realignment" (2000, p. 299).

It structures not only the temporal dimension of events but also their non-temporal dimension (Worth, 2008). It also provides a way of understanding and explaining the world and our relationship to it and to each other. In other words, the plot provides meaning for and understanding of those events. In this section the generation and justification of general narrative knowledge is discussed, followed by a discussion of medical narrative diagnostic knowledge.

9.3.1 Generation of Narrative Knowledge

Narrative knowledge depends on the tacit dimensions of a story (Polanyi, 1962). It involves the implicit or unspoken clues essential for understanding the story's comprehensiveness. In other words, the narrator has a particular perspective from which the story is told. Without the essential, tacit dimension, the listener may fail to understand the overall meaning of the story and focus only on limited facts of it, which may represent a distortion of the story's true meaning.

Richard Weinberg (1995), for example, narrates the story of a young woman who came to him because of chronic abdominal pain. Although she was seen by several gastroenterologists, who performed the requisite laboratory tests, Weinberg was able to diagnose the "illness" by connecting with the patient through their common interest in the pastry, Napoleons. Through that connection the patient made a return visit and he noticed rings under her eyes and inquired about her sleeping habits. From this tacit clue, Weinberg was able to gain her trust and discovered that she had been sexually abused by her sister's boyfriend almost a decade earlier. By connecting with the patient, the physician was able to enter the patient's narrative world. Without connecting to and understanding that world, the physician may be helpless to assist the patient.

According to Worth (2008), the generation of narrative knowledge involves knowing what something is "like" in terms of a story. She illustrates such knowledge with the story of Socrates' death: Socrates was a person who challenged the Athenians in their traditional ways of knowing in such a way that he unsettled some his contemporaries who claimed he offended the gods so that Socrates was tried as a heretic and condemned to drink hemlock. Worth contrasts this narrative account with the standard logical, discursive account, as exemplified by the syllogism:

> Socrates is a man,
> All men are mortal,
> Therefore, Socrates is mortal.

As evident from the narrative account there is no logical conclusion *per se*, but knowledge is transmitted in the account in terms of the events that transpired surrounding Socrates' death. The second account also transmits knowledge but knowledge that is simply contained in the premises. It is analytic rather than synthetic in nature (Ayer, 1952).

Stories like the first account of Socrates death exhibit "narrativeness" or the unfolding of the events in the account, while the second account exhibits little, if any, narrativeness (Morson, 2003). "The sense of process, the activity of tracing possible futures from a given past," according to Morson, "is essential to narrativeness" (2003, p. 61). Besides process, narrativeness also exhibits "presentness" or the condition that an event is not simply a logical derivative of prior events but one that is open to an array of possibilities. In other words, a future event although contingent upon past events is also independent of them and cannot be predicted. "Events themselves seem capable of working out in one way or the other," claims Morson, "so that if a sequence were repeated, the outcome might be different" (2003, p. 63). In the death of Socrates, for example, the first account provides ample room for the events to be otherwise. Socrates could have stopped challenging the Athenians, for instance, or the Athenians could have accepted Socrates' challenge. The second account makes Socrates' death inevitable. The narrative account captures so much more of what life is about: "We live in a world of everlasting and perpetual process, and to embrace process is to embrace life itself" (Morson, 2003, p. 73).

Narrative reasoning and, hence, the generation of narrative knowledge depend upon the imagination; for the ability to imagine is tied intimately to narrative reasoning (Worth, 2008). Psychological studies show that when learning we form mental images of the learned material, so that recall is based not on memorizing sentences but on the constructed mental images. Skills of imagination then aid in knowing and learning. Well constructed narratives that utilize just the relevant data and have well developed plots are easy to follow, especially in terms of implicit causal connections, while badly constructed stories with poorly developed plots are hard to follow and implode under the strain of irrelevant detail and facts.

Just as discursive reasoning is facilitated by engaging in logical and formal drills, so narrative reasoning is enhanced by engaging in exposure to well constructed stories (Worth, 2008). For the way we construct and generate narratives is connected to the way we know and understand. Although narrative reasoning skills do not lead to propositional knowledge as does discursive reasoning, it does lead to knowledge that involves an affective meaning, in that the narrated world is much richer and more meaningful than the abstracted world.

9.3.2 Justification of Narrative Knowledge

Although narrative provides a fuller account of the process of life, an important epistemological issue concerning narrative knowledge, as broached earlier for narrative explanation, is its validity or truth content. "For philosophers and logicians," claims Lubomír Doležel, "the distinction between reality and fiction, between truth and falsity, between reference and lack of reference, is a fundamental theoretical problem" (1980, p. 7). Specifically, proponents of discursive knowledge charge that proponents of narrative knowledge cannot distinguish fact from fiction or fable. In other words, the allegation is that the traditional means of justifying knowledge, especially discursive knowledge, are not applicable to narrative knowledge. There is no empirical or logical means by which to verify it.

In comments on the debate among historians over narrative, Hayden White acknowledges that the critical method of the natural sciences provides scientists with explanations of natural phenomena. "To many of those who would transform historical studies into a science," writes White, "the continued use by historians of a narrative mode of representation is an index of a failure at once methodological and theoretical" (1987, p. 26). Moreover, Andrew Norman (1991) argues that narrativists impose a story structure onto a pre-narrative phenomenon in order to obtain storied or narrative knowledge. The problem is, as Keiswirth acknowledges, "that a true story, one that claims to represent actual happenings…works as a communicative act exactly the same way as a fictional story, one that doesn't make such claims" (2000, p. 313). Narrativists have taken different approaches to resolve this problem.

Narrative naturalists argue that the narrative is a valid form of generating knowledge because it is a product of mental activity, at a fundamental level. As Keiswirth explains, "narrative naturalists want to see the relationship between the narrative way of knowing and the known as virtually transparent: story does not discursively impose order on an inchoate flow of mental materials, as some others contend; rather, it displays the narrative means by which the mind functions. In this way," he continues, "story is not merely invented but develops naturally as part of our conceptual and cognitive machinery, either alongside or underlying our logical and linguistic equipment" (2000, p. 305).

Along similar lines, Mark Turner (1996) posits a "literary mind" in which story, projection, and parable function to justify narrative knowledge. He holds that narrative reasoning operates at a level prior to conception or cognition; for it is the primary mental means by which perceptions are strung together to generate thought and knowledge. Turner posits "small spatial stories" that serve as the substrate for organizing the often chaotic flow of perceptions. From the story, we then project to other stories, in terms of parables, which help to determine meaning and to establish understanding.

For narrative constructivists, however, "story does not mirror paradigmatic, mental operations but is forged from a more active give-and-take between experience and meaning, particularly the experience of temporality in consciousness and how this is reciprocally apprehended and expressed whether posited in phenomenological or existential terms" (Kreiswirth, 2000, p. 308). For example, Paul Ricoeur presupposes a reciprocal relationship between narrativity and temporality: "I take temporality to be that structure of existence that reaches language in narrativity and narrativity to be the language structure that has temporality as its ultimate referent" (1980, p. 169). Temporality represents the "deepest level" of temporal organization compared to "within-time-ness" and "historicality." Finally, Ricoeur locates narrativity's role within the plot: "A story is *made out of* events to the extent that plot *makes* events *into* a story. The plot, therefore, places us at the crossing point of temporality and narrativity" (1980, p. 171). Plot, then, is the means by which story is made an "intelligible whole" and meaning emerges from the narrativity's portrayal of temporal experience (Ricoeur, 1984).

For other narrative constructivists, narrative is justified in terms of personal identity and its construction: "we must inescapably understand our lives in narrative form, as a 'quest' " (Taylor, 1989, p. 52). Identity has both an ethical and a sociopolitical context (Kreiswirth, 2000). For the ethical context, for example, the moral self represents an unfolding narrative of what our social role is and how that role is discharged (MacIntyre, 1984). What is to be done and how it is to be done unfold in terms of the interlocking narratives of individuals within a society. The self is a "narrated quest," in which it strives for the "good" (MacIntyre, 1984, pp. 218–219). Only in terms of a person's story does the self, especially the moral or ethical self, emerge: "stories capture our sense of ourselves and others as developing moral agents, with pasts, presents, and futures" (Kreiswirth, 2000, p. 309).

For the sociopolitical context, individuating narratives and their ethical and moral dimensions are influenced by and judged according to cultural standards. "Narratives that explore certain individuals and groups self-identified by gender, race, sexuality, class, or ethnicity," claims Kreiswirth, "tend to validate the tellings not only in terms of their specificity, credibility, dynamism, and the cultural or political work they perform but also in terms of how they can be seen to respond to the dominant tales of social identity and power within and against which they are produced" (2000, p. 310).

Personal narratives and the individuals they construct are "shaped by the prevailing norms of discourse in which they operate" (Rosenwald and Ochberg, 1992, p. 3). George Rosenwald and Richard Ochberg (1992) reject the weaker notion that a "good" story is one that "works" for the individual. Rather, they posit a dialectic in which the individual is constructed in terms of conflict with the social context. Rosenwald and Ochberg admit that "desire (and the life stories in which it is represented) is inevitably shaped by the forms each culture provides. At the same time," they contend, "desire strains against these forms. The silences, truncations, and confusions in stories as well as the occasional outbreaks of action contradicting an individual's 'official' narrative, point out to us—and to the narrator, if only his or her recognition can be enlisted—what else might be said and thought" (1992, p. 7).

Narrativists want to distinguish fundamentally between discursive and narrative knowledge, especially in terms of justifying truth claims. For both types of reasoning operate with different principles and criteria (Worth, 2008). Hence, proponents of narrative knowledge have developed non-traditional, alternative means for justifying storied knowledge. For example, instead of focusing on traditional notions of truth narrativists focus on the story's lifelikeness or believability (Bruner, 1986). The goal then of narrative knowing is not empirical proof but verisimilitude. For narrative knowledge provides a plausible rather than a true account of the world (Hannabuss, 2000). The criterion of plausibility posits the significance of plot for determining a story's validity, by structuring the temporal events of the story that leads to a conclusion (Polkinghorne, 1995).

D.C. Phillips, however, claims that the criteria of "plausibility, evocativeness, presence of an engaging plot, and the ability to generate playful exploration…are inadequate" (1994, p. 13). For example, Philips criticizes the reliance on plot for determining a story's validity or truth accordingly: "The conditions which the need for a clear plot imposes upon a story are *epistemically irrelevant*; the plain fact of the matter is that unification of the narrative, having a clear conclusion to which the narrative coherently leads, and so forth, can be achieved without the story being true" (1997, p. 105).[13] Moreover, plausibility is too weak a criterion, since there are true stories that initially seem implausible. The best that can be accomplished with narrative is a regulatory truth: "Often our goal is to find the truth, and we do the best that we can, using the strongest epistemic warrants that are available" (Philips, 1997, p. 108).

Kreiswirth also addresses the questions concerning narrative validity or truth: "what kinds of tales and tellers should we approve, and for what purposes? And what should count as criteria for approval?" (2000, p. 295). The answers the naturalists and constructivist provide to these questions are problematic, especially in terms of narrative bivalency: "the 'what' of the story told and the 'how' of its telling" (Kreiswirth, 2000, p. 302). Kreiswirth appeals for a disciplined narrative in which epistemological issues are not ignored but rather narrativists attempt "to know what's happening in the telling, where it's happening, what it claims, and what it does" (2000, p. 316).

Rosenwald (1992) also addresses this problem and suggests an epistemological foundation for a disciplined narrative by delineating several features of a better or good story. The first feature is that a better story has narrative generalizations substantiated by specific instances within the narrative. "Better stories," as Rosenwald points out for the second feature, "tend to be structurally more complex, more varied and contrastive in the events and accompanying feelings portrayed, more interesting and three-dimensional" (1992, p. 284). However, a better story must also be more coherent besides being more inclusive and detailed: "A good story must not only be horizontally coherent—episodes hanging together to warrant generalizations—but also vertically—episodes warranted by acts, feelings, and so on" (Rosenwald, 1992, p. 285). The last feature of a good story is that it leads to novel acts as the narrative is further articulated. "The truth of a narrative is therefore not representational and not pragmatic," concludes Rosenwald, "but dialectical: the narrative is true in that it enshrines the toil of undoing representational and social perplexity—both forms of routinized suffering; it is true as the laborious negation of the prior self-consciousness" (1992, p. 286).

9.3.3 Medical Narrative Diagnostic Knowledge

"Medicine is fundamentally narrative," according to Kathryn Hunter, "…and its daily practice is filled with stories" (1991, p. 5). For humanistic practitioners, then, medical knowledge and practice are fundamentally narrative in nature. "Doctors may try, in the usual fashion of history taking, to restrict their patients to simple

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[13] According to Philips, plots constrain narratives while nature constrains a true science: "In any discipline that is (or aspires to be) a science, or wishes to tell the truth, or to offer true explanations, any story that is told—to put it crudely—is shaped to an important degree by nature" (1997, p. 106).

yes-or-no answers to questions designed to reveal some diagnostic pattern," observes Cassell, "but patients almost always respond in telling stories" (1991, p. 167). In other words, the objective data obtained during the diagnostic procedures of the biomedical model are important; however, for the humane practitioner a fuller account of the disease involves allowing the patient to recount or narrate more fully the illness experience. How a patient narrates the symptoms shapes the content of medical knowledge, especially in terms of diagnosis, and influences therapeutic outcomes. For example, if the patient fails to mention important symptoms of the disease during the medical interview then the chance of the physician making an accurate diagnosis is quickly diminished and the proposed therapeutic modality may be ineffectual.

For the humane practitioner, the patient is a text that needs to be interpreted. "The practice of medicine," according to Hunter, "is an interpretative activity. It is," she argues, "the art of adjusting scientific abstractions to the individual case" (1991, p. xvii). Biomedical research and technology provide objective knowledge, in terms of data and observations, concerning diagnosis and therapeutics but at the expense of bracketing the patient's existential concerns and personal life. For example, in the case study narrated by Kassirer and Kopelman (1989), the only relevant clinical data are the patient's alcohol drinking and cigarette smoking behavior. And at no time were questions asked about the patient's life style choices that led to these abusive and destructive behavioral patterns.

Bracketing of a patient's personal life is a major contributor to modern medicine's quality-of-care crisis. Humane practitioners incorporate a patient's story in order to address the existential concerns and the crisis itself. "The metaphor of the patient as text and the physician as a well educated, attentive close reader of that text," notes Hunter, "goes a long way toward capturing the complexities of the emotional and epistemological relation between the physician and patient" (1991, p. 12). And, it also goes a long way in addressing the quality-of-care crisis.

Part of the problem with the biomedical model is that symptoms and signs are thought to provide direct access to the disease, such that a report by the patient of pain must be directly correlated with a sign observed by the physician. If the sign cannot be observed, then the physician questions whether the patient is truly experiencing pain. Important for the physician to understand is how the presenting symptom became a symptom for the patient in the first place. The problem is that medical science considers symptoms as generalities, when in fact they are specific expressions and characteristics of *this* patient. Patients become aware of illness when they assign meaning to a particular bodily dysfunction. "Disturbances in bodily function, when they become severe enough," according to Cassell, "are assigned significance in terms of disease" (1991, p. 102). The role of the physician is to uncover this world of meaning for each patient through the medical interview.

The symptoms for a patient are embedded in a story, as the patient lives out the illness. That story cannot be reduced to physiological and pathological signs alone, in terms of the meaning associated with the illness. If physicians are to help in terms of either a cure or healing, then they must access the illness narrative in order to enter into a patient's illness experience. For example, during the present illness history part of the medical interview the humane clinician often seeks the patient's input as to what is wrong or what is causing the illness.

"The physician," according to Billings and Stoeckle, "must appreciate what illness means to the patient. This meaning," they observe, "is often embedded in what the patient thinks has caused the illness—the illness attributions" (1999, p. 113). These attributions can be a process that explains either the disease's cause or the direct cause itself. The source for patient attributions can be lay medical knowledge, cultural beliefs about disease, or personal meaning obtained from the patient's personal experience or the experience of family members or friends. "By appreciating attributions," conclude Billings and Stoeckle, "the doctor learns about the basis of the patient's behavior; by responding to them, the doctor facilitates, personalizes, and enhances care of the patient" (1999, pp. 117–118).

A patient's narrative is important for gaining knowledge of the individual patient as a person and not just as a body (Cassell, 1991). Using the example of an underfed, elderly man who succumbed to pneumonia after his wife died, Cassell claims that scientific "medicine might hold that the story is *only* concerned with what happened to his body, but we know that stance to be insufficient because what happened to his body would have been different if some nonbody features of the narrative were changed" (1991, p. 112). In other words, illness is unique to an individual in terms of its origins and impact on that individual. The illness experience is made intelligible by a patient's history. "To know that illness," Cassell insists, "one must know something of the person. To know the person," he continues, "one must know something of the narrative" (1991, p. 167). Thus, knowledge of both the illness and the person are intimately connected and knowledge of the illness, at least knowledge of *this* patient is not possible without the patient's narration of the illness experience. Patient narratives structure medical knowledge.

Story telling, however, is not simply one-way, from patient to physician. Physicians also frequently tell stories to their patients (Cassell, 1991, p. 167). Since the patient is a text the physician is like a literary critic, who also produces a text derived from the patient's text, concerning the patient's disease. Whereas the patient's text is of the illness experience, the physician's biomedical text is an interpretation of that experience into medico-scientific language—often with a flat affect. Consequently, the physician's "medical narrative is all but unrecognizable as a version of the patient's experience" (Hunter, 1991, p. 13). The biomedical narrative, although technical in nature, is critical for communicating not with the patient but with other healthcare professionals involved in the patient's care.[14] However, the

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[14] Mattingly (1998) contends that the technical biomedical narrative is not narrative in nature but anti-narrative. The formal biomedical narrative, which she labels as "chart talk," brackets the social and personal elements of the illness experience, while the stories told to colleagues in informal settings, like over lunch, allow healthcare workers, in Mattingly's study occupational therapists, to include these elements. "Sharing stories," she argues, "allowed them [occupational therapists] to deal in human agency, in complex social relationships, in emotion, in cultural difference, and other matters skirted by canonical discourse" (Mattingly, 1998, p. 274).

physician's text is the predominant one for the medical community and often eclipses the patient's text. The problem is how to connect the two texts so that the patient's existential concerns are addressed. The quality-of-care crisis is located at the disjunction of these two texts.

Finally, as for narratives in general, medical narratives, particularly the physician's narrative, also require verification in terms of their facts. Hunter (1991) adopts the criteria of Barney Glaser and Anselm Strauss for validating the narrative's medical facts. The first criterion is the narrative's fitness and ability to account of the relevant evidence and observations of a patient's illness. For example, the diagnosis should explain a patient's presenting symptom and signs obtained by a physician from the physical examination and laboratory tests. The next criterion is the acceptability of the diagnostic account to healthcare colleagues and especially to the patient. The third criterion is that the medical narrative *qua* diagnosis must be generalizable to other patients with similar symptoms and signs. The final criterion is that the diagnosis should guide a physician to effective therapy for treating the patient. Based on these criteria, Hunter concludes that "the method of reasoning embodied in the differential diagnosis…operates as a check on both the adequacy of the hypotheses and the reliability of the technology" (1991, p. 17).

9.4 Summary

Biomedical practitioners base diagnostic knowledge on a discursive framework that often objectifies the patient, leaving him or her reduced to an objectified organ or tissue. Of course, this diagnostic process has contributed to the quality-of-care crisis. In response to that crisis, humanistic or humane practitioners attempt to infuse the human dimension of the patient, through the patient's narration of his or her illness story, into the diagnostic procedure and the resultant knowledge. Moreover, the patient's story is not complete simply with the objective epistemological details of the narrated illness experience but must also include the ethical and moral details of that experience. Medicine is not simply gathering data or even information about the patient's disease or illness, but must also include the patient's values. Narrative diagnostic knowledge, then, is required for comprehensive diagnostic knowledge that makes possible a patient's return to wholeness.

Chapter 10
Therapeutic Knowledge

How is therapeutic knowledge generated and justified in medicine? Modern medical knowledge in terms of both diagnostic and therapeutic procedures is certainly more dependent on technical innovation than fifty years ago, as detailed in Chapter 5. But that dependency is more than simply a need for technical devices in order to practice medicine; rather, it has a definite epistemological component. "The *episteme* of technology," according to Ian McWhinney, "has become the *episteme* of medicine" (1978, p. 299). In other words, modern biomedical knowledge is driven by technical and research innovation, whether in terms of mechanical or cognitive devices. In this chapter, the epistemological issues concerning the cognitive or research devices are examined in the first section, followed by technical devices in the next section. The chapter ends with an examination of the epistemological issues associated with narrative therapy, often championed by humanistic or humane practitioners to address quality-of-care issues.

10.1 Biomedical Research

Biomedical research is patterned after research in the natural sciences. "The biomedical model," according to Engel, "was devised by medical scientists for the study of disease. As such, it was a scientific model; that is," he argues, "it involved a shared set of assumptions and rules of conduct based on the scientific method and constituted a blue print of research" (1977, p. 130). Biomedical research, especially in terms of clinical trials, is the single most important factor in the rise and for the success of the biomedical model in the twentieth century (Le Fanu, 2002).

Clinical trials are the systematic investigation or search for "facts" or "generalizable knowledge" concerning the efficacy of therapeutic treatments, such as pharmaceutical drugs and surgical procedures (Pellegrin and Nesbitt, 2004, p. 2). Such research often begins not at the bedside with patients but rather in the laboratory as preclinical research, e.g. in discovering new drugs and in testing them on laboratory animals. The goal of such research is to evaluate a therapeutic treatment's efficacy and its risk with respect to injurious side effects. Once a treatment is shown to be

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

effective and safe within the laboratory on experimental animals, human trials are then under taken in the clinic.

There are three phases to clinical trials that must be completed successfully before a new treatment or procedure is approved for therapeutic purposes. A fourth phase may also be undertaken, after a treatment is marketed publicly, to insure its continued efficacy and safety. The "gold standard" of biomedical research is the randomized controlled trial (RCT): "Inherent in this scientific approach [RCT] is the epistemic status of the knowledge linked to therapeutic claims" (Christensen and Hansen, 2004, p. 68). The RCT exhibits two chief features: a concurrently controlled group to which the treatment group is compared and randomized allocation of patients to the two groups to remove bias (Matthews, 2000). However, not all medical knowledge or practice depends upon the RCT and other designs of clinical trials suffice for the generation of medical knowledge.

10.1.1 Clinical Trials

"Clinical trials," according to J.N.S. Matthews, "are experiments performed on human subjects, usually patients, in order to assess the efficacy of a treatment that is under investigation" (2000, p. xiii). Besides efficacy, clinical trials are also used to test a treatment's safety (Spodick, 1982). A treatment may be either a pharmaceutical drug or a surgical procedure. Clinical trails are also performed to analyze diagnostic protocols or screening programs. The clinical trial represents the introduction of the experimental method of the natural sciences into clinical medicine, which gave rise to twentieth-century clinical science. Today, it is the formalization of daily medical practice: "The practice of medicine is in effect the conduct of clinical research, in which questions are asked and new facts are obtained, synthesized, analyzed, and acted upon" (Chalmers, 1981, p. 325).

Empirical evidence is the standard by which epistemological issues concerning the efficacy and safety of a treatment are resolved in modern medicine. No longer is anecdotal evidence or authoritarian opinion adequate to justify a therapeutic treatment. "Simply believing that one treatment is superior to another," notes Matthews, "is not justification for acting on that belief: such justification requires you to collect evidence to prove or refute your beliefs and the RCT is the currently accepted tool for doing this" (2000, p. 3)

There are three types of clinical trials (Lilienfeld, 1982). The first is the therapeutic trial, in which a pharmaceutical drug, such as insulin, or surgical procedure, such as by-pass surgery, is used to treat a disease or its condition. The second type of clinical trial is intervention, in which the clinical scientist intervenes prior to the development of a disease in patients who exhibit the disease's symptoms partially or who are at risk for the disease. An example of such intervention is a double mastectomy on a middle-aged woman with predominant genetic markers for breast cancer. The final type of clinical trial is preventive or prophylactic, in which a drug or procedure is used to prevent the appearance of the disease, when a person is asymptomatic or normal. The classic example is a vaccination trial.

Each of the three types of trials can be further divided into explanatory and management trials (Sackett, 1983). The former trials are concerned with providing the mechanism by which the treatment works, generally under specified conditions and with a well-defined subject population. The latter trials are concerned with "all real-world consequences, good or bad, of treating an illness in a certain way and to determine whether therapy works, usually under as close to routine clinical circumstances as possible" (Sackett, 1983, p. 66).

The structure of the RCT contains five important elements (Matthews, 2000). The first is the identification of a uniform population of eligible subjects, especially patients. The second is the selection of test subjects from the eligible population. Appropriate criteria for selection are critical to ensure that comparison between the experimental or treated and controlled groups is permissible and valid. To ensure that the results are free of bias, the assignment of subjects to either experimental or controlled groups is accomplished through randomization. The final element is a robust analysis of the results, especially in terms of statistical analysis. There are three key components to a RCT: randomization of the subjects, blinding of patients and clinicians to randomization, and controlled groups either for current treatment protocols or for placebo effect. It is these components that make the RCT a "gold standard."

10.1.1.1 Prerequisites for Clinical Trial Success

Before presenting the four phases of a clinical trial, several prerequisites for the success of such a trial must be discussed first (Sackett, 1983; Tobias et al., 2000). Success does not mean obtaining the results anticipated for a trial, but rather it means that the results bring consensus to the medical community (Tobias et al., 2000). The very first prerequisite is certainly the need for a drug or procedure to treat a widespread or debilitating disease. In other words, there is no current drug or procedure that is sufficiently effective or safe for treating the disease, or if there is it is not optimal and improvement would be beneficial.

The next prerequisite involves both the appropriateness and unambiguousness of the question asked of the effectiveness and/or safety of the drug or procedure. Moreover, the question must be appealing to patients in order to gain their participation in the trial. Sackett identifies two main questions asked in clinical trials. The first question seeks to determine if the drug is effective, e.g. "Can drug A reduce tumor size?", while the second asks whether it is worthwhile or safe, e.g. "Does prescribing drug A to patients with tumors do more good than harm?" (Sackett, 1983, p. 66). An inability to distinguish between these types of questions often leads to controversy over the interpretations of a trial's evidence.

Another prerequisite is the possibility or feasibility of the trial. According to Sackett, there are three elements to this prerequisite: "the protocol must be attractive to the potential clinical collaborators, appropriate types and numbers of study patients must be available, and minimal performance criteria for containing or abandoning the trial must be set" (1983, p. 74). Central to the first element is a clinical design that is aesthetically appealing to clinicians, especially in terms of providing not only valid conclusions but also relevant generalizations. The second element involves appropriate criteria for including or excluding test subjects in the trial, in order to attain appropriate numbers for statistical significance. Finally, reasonable and clearly defined criteria for abandoning a trial are required. Often the feasibility of a trial is initially determined through a pilot study, as long as it does not compromise these elements.

A critical prerequisite is a trial's practicality, particularly in terms of a protocol that makes patient participation straightforward and unproblematic: "The study must be perceived as attractive and appealing to the patient, to ensure enthusiastic participation" (Tobias et al., 2000, p. 1372). Many studies are unsuccessful or fail because the trial does not clearly communicate to the patient the importance or significance or the demands or sacrifices on the patient's part.[1] Thus, the success of a clinical trial, just as the success of a therapeutic protocol, depends on a vital and dynamic relationship between the patient as test subject and the physician as clinical scientist: "A healthy research community is…dependent on the integrity and creativeness of the individual doctor-patient partnership, committed to a joint responsibility both for the study design and also to its implementation" (Tobias et al., 2000, p. 1372).

Another vital prerequisite for the success of a clinical trial is an administrative structure that is effective (Sackett, 1983). That structure must be able to manage the daily activities and problems, especially for trials that involve more than a single center. Joint ownership of a trial, especially for a multi-center trial, is vital for maintaining high-level quality of output among the different participants. Moreover, the trial's directors must hire top-quality personnel, especially laboratory and clinical participants and statisticians, to conduct the study and to use the most current and best technology available. Finally, besides being effective a trial's administration must also be efficient, especially in terms of a trial's cost and utilization of resources. Sufficient financial support of a trial is critical not only for conducting a top-quality study but also for the necessary follow-up studies.

The final prerequisite involves a valid "trial architecture" (Sackett, 1983, p. 69). A major problem with most clinical trials is that they are often invalid because a confounding variable is unaccounted for and produces bias—"the arrival at a conclusion that differs systematically from the truth" (Sackett, 1983, p. 69). Sackett identifies several ways to avoid confounding variables, from restricting inclusion of particular patients within a study to random allocation of patients within the various control and experimental groups. Randomization is the best way to avoid bias, although ethical concerns may surface over randomizing a trial for a highly morbid disease in which the drug or procedure is possibly efficacious. Besides randomization, controlled and blinding groups are also important for eliminating confounding variables that lead to bias.

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[1] A related prerequisite for a successful clinical trial is the relationship of the patients and clinicians: "Success will require flexibility, tolerance and mutual appreciation of the collaborative roles of physicians and patients" (Tobias et al., 2000, p. 1372). An effective means to achieve this prerequisite is to invite patient participation in the trial's design.

10.1.1.2 Four Phases of Clinical Trials

The first phase of a clinical trial involves a modest group of around forty to eighty healthy volunteers and lasts for about one month. The goal of this phase is to determine the safety of a drug and the maximum tolerance of volunteers to it. Generally these goals are accomplished by an ascending dose-response test. The protocol involves administration of the drug, after which blood samples are drawn at different times to determine the drug's pharmokinetics, including its absorption, distribution, metabolism, and excretion. The type of information obtained from this phase involves a drug's physiological effects, especially any side effects or toxicities, and the maximal dose tolerated by volunteers.

The second phase involves a large group of well-screened patient volunteers of around two hundred, suffering from an appropriate disease. The goal of this phase is to determine a drug's efficacy, as well as its safety. This phase can last for several months. Again, the pharmacokinetics, as well as the efficacy and safety, of the drug are determined at various doses. Generally, the studies are double-blind, randomized, contain several control groups, and are often controlled for placebo effect. This phase is really a pilot study with patients selected by strict and well-defined criteria to determine whether phase III studies are warranted.

The third phase mimics the anticipated treatment regime in terms of duration and design. The size of the patient population is in the hundreds to thousands and the criteria for selection of test subjects are not as strict as in a phase II trial. The goal of this phase is to determine both the efficacy and safety of the drug at a particular dosage determined from the second phase. The design of a phase III clinical trial is the randomized, double-blind, placebo-controlled trial. If this phase of the trial is successful, then FDA approval of the drug for therapeutic use generally follows.

Although not required by the FDA, a fourth phase may be conducted to monitor a larger and more diverse patient population for both the efficacy and safety of the treatment. This phase can last for years and may provide data on the general use of a drug. Moreover, the criteria are even less strict for selecting patients than in phase III trials. For example, patients with co-morbid diseases, such as diabetes, may participate in a phase IV trial. Another important goal of this phase is pharmacoeconomic data, especially if another treatment modality is available.

10.1.2 Randomized, Double-Blind, Concurrently Controlled Clinical Trials

The development of the standard clinical trial enjoys a history that stretches back to the eighteenth century, beginning with the French royal investigation into mesmerism (Green, 2002).[2] In that trial, the royal investigation, headed by Benjamin Franklin,

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[2] J.P. Bull (1959) provided one of the first analyses of the historical development of the clinical trial, beginning with the Egyptian physicians and proceeding to the twentieth century.

introduced two important elements of the current clinical trial: “sham intervention and subject ignorance about the bogus nature of that intervention” (Green, 2002, p. 311). An RCT prototype eventually emerged in mid twentieth century, with the streptomycin clinical trial that cemented the biomedical model for medical knowledge and practice (Doll, 1984).[3] “The streptomycin trial demonstrated,” according to Christensen and Hansen, “that therapies can be evaluated in an empirical and experimental manner and require validation regardless of subject” (2004, p. 68).

The evolution of the RCT to its current state has included randomization, blinding, and control groups to remove possible bias and confounding variables that might comprise the integrity or validity of a trial’s results, in terms of determining a treatment’s or procedure’s actual efficacy and safety (Green, 2002; Lilienfeld, 1982). RCTs achieve their objectives in terms of “ceteris paribus, i.e., ‘all other factors being equal’ ” (Lilienfeld, 1982, p. 3).

10.1.2.1 Bias and Placebo Effect

The main purpose of RCTs is to eliminate possible biases, such as selection bias, allocation bias, assessment (or observer or information) bias, or stopping bias, which can compromise the comparison of the results between the experimental and control groups (Matthews, 2000). Bias is a “distortion of judgment, or action, based on personal preference or a wished-for result” (Spodick, 1982, p. 21). Selection bias refers to entering a patient into a controlled or treated group preferentially: “Selection bias can occur when the decision to enter a patient into an RCT is influenced by knowledge of which treatment the patient will receive when entered” (Matthews, 2000, p. 14).

Allocation bias refers to a preferential distribution of subjects with a certain prognostic indicator, such as a subject’s immunological competence, to either the test or control group. The skewing of allocation is often the result of the stochastic nature of simple randomization, while more robust means of randomization often reduce this bias. Assessment bias is the result of subjective evaluation or assessment of the trial’s outcomes: “If the observer knows the treatment being given to the patient and if the measurement of an outcome variable contains an element of subjectivity, then it is possible that the value of an observation might be influenced by knowledge of the treatment” (Matthews, 2000, p. 19). Finally, stopping bias can be introduced when a trial is conducted until a significance difference is obtained between the treated and controlled groups.

Besides bias, another important factor that could influence or invalidate a clinical trial’s results is the placebo effect (Macedo et al., 2003; Papakostas axnd Daras, 2001).[4] Although the placebo effect was recognized for centuries, it took on

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[3] The first RCT in medical research is a point of debate, see Neuhauser and Diaz (2004).

[4] The role of the placebo effect in medicine has come under recent fire, by a systematic analysis of published clinical trials in which a placebo is compared to no treatment. Hróbjartsson and Gøtzsche (2001), for example, find that the placebo effect is not the 35% traditionally reported and conclude that placebos generally do not have a significant clinical effect. Their conclusion, however, is not unchallenged (Bailar, 2001).

greater importance in the last several decades *vis-à-vis* evidence-based medicine. Although there are a number of definitions proposed for the placebo effect, there is no current consensus definition (de Craen et al., 1999; Macedo et al., 2003). According to David Cockburn, "the placebo effect can be measured but not adequately explained" (2002, p. 1). At best, the effect is defined in operational terms as "*the difference in outcome between a placebo treated group and an untreated control group in an unbiased experiment*" (Gøtzsche, 1994, p. 925).

The placebo effect is an important factor in many therapeutic encounters between patients and physicians. "Even without a consensual definition, and assuming that the placebo effect does not seem to be fully dependent on a placebo administration," claim Macedo and colleagues, "one issue seems unquestionable: the placebo effect is present in clinical practice and in clinical trials, no matter which name we choose to call it" (Macedo et al., 2003, p. 337).

The placebo effect is a general result of therapeutic protocols to treat diseases. It certainly contributes to some extent in almost all protocols and most likely cannot be eliminated entirely from them, although randomization and blinding can minimize its role or effect. Although it cannot be explained in mechanistic terms, the placebo effect appears to be a function of the mind itself since it cannot be elicited in an unconscious patient. The main theories to account for the placebo effect are classical conditioning, response expectancy, and psychoneuroimmunological response (de Craen et al., 1999; Papakostas and Daras, 2001).

10.1.2.2 Randomization

Randomization is by far the least problematic means by which to avoid bias.[5] It ensures that "chance alone assigns a patient to a particular treatment" (Spodick, 1982, p. 21). In the 1920s and 1930s, R.A. Fisher championed its significance and necessity and randomization became accepted and mandatory in clinical medicine after 1940 (Green, 2002; Lilienfeld, 1982). RCTs must be conducted such that the test subjects are randomly assigned to either experimental or controlled groups. Briefly, randomization is achieved by assigning treatment and subjects according to standard protocols, as simple as flipping a coin, by using random number tables, or by computer generated random numbers.

Randomization can remove bias, such as selection or assessment bias, which is associated with age, sex, social status, among other confounding variables. Such bias could easily nullify the significance of a clinical trail's results. However, "randomization limits the expression of the various forms of bias that might

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[5] Although randomization appears to be unproblematic, Worrall (2007) raises issues—especially ethical issues—concerning its applicability with a case study in which an 80% mortality rate for neonates suffering from persistent pulmonary hypertension syndrome was converted to an 80% survival rate, by treatment with extracorporeal membraneous oxygenation. Worrall's point is that randomization may not be applicable to or even necessary for all cases, since randomization may not control for all biases or confounding factors.

otherwise shift more of those subjects who will have better outcomes into one or another of the treatment groups" (Heaney, 1991, p. 105). Finally, randomization permits the results from the treated and controlled groups to be compared in order to determine causation: "Randomization is the means by which the ability to state that the difference in treatment groups is caused by the difference in treatments is achieved" (Matthews, 2000, p. 10).

Randomization cannot avoid all possible sources of bias and it cannot guarantee the validity of a clinical trial's results. Sackett identifies several issues that need to be kept in mind in order to avoid biasing a clinical trial, even tough the trial is randomized (1983, pp. 71–72). The first is that ancillary techniques not directly associated with a drug or procedure being tested must also be performed on the control group. The next issue is avoiding any exposure of the control subject to the test drug or protocol. Another issue is to avoid any contamination of the control with test subjects who have received the drug or procedure. Finally, as noted above, simple randomization cannot eliminate allocation bias, "because knowledge about which treatment is about to be assigned can influence whether or not a patient is deemed suitable to enter a trial, as well as how hard the physician tries to persuade a reluctant patient to volunteer" (Chalmers, 1981, p. 330). It is imperative, then, that the randomizing itself is blinded by an appropriate technique.

10.1.2.3 Blinding[6]

Another important factor in clinical trials is blinding, which is employed to remove bias, especially assessment bias, associated with a clinical trial.[7] Blinding is a "[p]lanned concealment from the physician, the patient, or both, of the nature of the actual substance being tested" (Spodick, 1982, p. 21). The term "blind test" was introduced into the literature in the 1930s by Harry Gold and colleagues, who adapted it from the work of British psychologist H.H.R. Rivers (Green, 2002; Strong, 1999).[8]

A single-blind trial refers to the situation in which the clinician knows which patient is receiving the drug or experimental treatment, while the patient does not. This type of blinding is often used when the treatment has serious side effects that require constant monitoring. The obvious problem with this type of blinding

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[6] Some investigators shun the term "blinding" in favor of the term "masking." "'Masking'," according to Ian Chalmers and Douglas Altman, "may have originated relatively recently as a euphemism for 'blinding' in trials involving participants who have impaired vision" (2002, p. 257).

[7] Chalmers and Altman introduce the notion of allocation concealment to address selection bias and reserve blinding for assessment bias: "Allocation concealment…protects the allocation sequence *before and until* assignment…In contrast, blinding…protects the sequence *after* allocation" (2002, p. 257). They claim that allocation concealment is more important in preventing bias than blinding.

[8] The term "blinding" arose from Franklin and associates' use of a blindfold on subject to test the claims of Mesmerism (Chalmers and Altman, 2002).

involves possible subjective or subconscious communication or behavior on a clinician's part, which may lead to a placebo effect. To remove this bias, a double-blind trial is often conducted in which both investigator or clinician and patient do not know who is receiving the drug. It is the randomized, double-blind controlled clinical trial that is the preferred method for testing the efficacy of a drug or procedure.

In a triple-blind study, another level of blinding is introduced in terms of blinding the person who assigns which group receives treatment or it may refer to the statistician or data analyst and/or the person interpreting or assessing or collecting the results who is kept ignorant of which group represents what. If the statisticians or assessors are two separate persons and if both are kept blind of the assignments, then the study is quadruple blind.[9]

10.1.2.4 Concurrently Controlled Groups

Besides randomization and blinding, bias is also eliminated by adding concurrent controlled groups to the experimental trials (Matthews, 2000). There are at least three ways by which to control a trial. The first is the traditional control-group which does not receive the same experimental protocol or treatment as the test or experimental group, e.g. those receiving the drug. The comparison of the treated group and the non-treated, controlled group allows a clinical scientist to conclude whether the treatment or drug is effective with respect to the disease.

The second sense of control involves neutralizing any placebo effect, generally by undergoing the same experimental protocol but without receiving the active treatment. If it is a drug that is being tested, then one gives a pill or placebo that does not contain the active ingredient—traditionally such pills contain sugar.[10] There are also active placebos, which mimic the effects or side-effects of the treatment being tested. This control-group permits the clinical scientist to determine whether any improvement in the disease is the result of a psychological effect due to general manipulation or is the result of the treatment.

The final control is an active control-group, which receives a different treatment protocol that is effective but not the same as the experimental treatment (Pellegrin and Nesbitt, 2004). The purpose of this control is comparison of the efficacy of the experimental or new treatment to a known or an older treatment and to demonstrate that the newer treatment is better than or superior to a current treatment.

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[9] According to Chalmers and Altman (2002), the use of term "blinding" in the literature is often inconsistent or ambiguous. For example, a double-blind study may refer to either the statistician or investigator and patient being blinded—and sometimes to all three.

[10] J.H. Gaddum from the University of Edinburgh argues that such pills should be called "dummies" not "placebos" (Strong, 1999).

10.1.3 Other Clinical Trails

Although RCTs are considered the "gold standard" in medical epistemology, not all medical knowledge is justified by such trials (Hennekens and Buring, 1987; Thagard, 1999). There is often no single or possible way by which to run a clinical trial to obtain the necessary information concerning treatment efficacy for every drug or procedure. For example, the current recommendation for the daily dose of fluoride is half of the earlier recommendation of 75 mg/day. "How is it," queries Robert Heaney, "that we know this? There has been no randomized, controlled trial dealing with this issue. The answer is partly the shared experience of the community of clinical investigators working with fluoride for the past 20 years" (1991, p. 105).

Moreover, "in everyday practice a multitude of management decisions must still be taken without good evidence" (van Gijn, 2005, p. 69). The reasons for a lack of such evidence includes that a trial may be impractical or not feasible or that a trial's results may be equivocal. Finally, good clinical practice often means doing the best with what is available, even if it is not evidence based but antidotal: "Evidence based medicine is not restricted to randomized trials and meta-analysis. It involves tracking down the best external evidence with which to answer our clinical questions" (Sackett et al., 1996, p. 72).

Thagard (1999), utilizing Hennekens and Buring (1987), identifies several different types of medical studies that are divided into two major groups: descriptive and analytic studies. The first descriptive study consists of correlational studies, in which the disease frequency from different populations is compared for a specific time period. The next type of descriptive study consists of the single case study, which involves a detailed description of a single patient and the course of the disease. The final descriptive study is the cross-sectional survey, in which large amounts of data are collected on a particular risk factor, such as cigarette smoking, and the incidence of disease, in a particular time period.

The analytic studies involve "an explicit comparison of the risk factor of disease between those exposed to a factor and those not exposed" (Thagard, 1999, p. 76). Besides RCT, there are two analytic studies. The first is the case-control study, in which a population of patients with a disease is compared to a control population not expressing the disease. The next analytic study is the cohort study, in which a population exposed to a risk factor and one not exposed to it are followed over time to determine the disease's development and expression.

10.2 Biomedical Technology

A major epistemological problem with technical innovations is their assessment. Whereas a drug's efficacy is determined by RCT, no standard method of assessment is available or accepted for technical devises, especially new surgical protocols. "For evaluating surgical operations and multimodality therapeutic regimes such as intensive care, RCTs are much less consistently employed, leading to editorial scolding," according to Jennett, "on both sides of the Atlantic" (1986, p. 233). Surgical research presents special problems for the application of RCT not encountered in drug research, such as postoperative procedures and the placebo effect.

Although surgical procedures do lend themselves easily to RCT analysis, an analysis of the surgical literature revealed that around 40% of surgical protocols could be evaluated using RCT (Solomon and McLeod, 1995). Even though limitations exist, the use of RCT is still encouraged in the evaluation of surgical protocols: "the RCT is the undoubted gold standard for the evaluation of medical therapies. This holds true for surgical operations too, and we definitely encourage every surgeon to conduct such studies" (Sauerland et al., 1999, p. 426). However, others claim that the limitations of RCT hinder it from assessing adequately surgical protocols. For example, Nick Black (1999) lists several limitations, including lack of generalization of RCT to individual patient and oversimplification of the application of RCT to surgery, and asserts that RCT is nothing more than a "passing fad."[11]

Jonathan Meakins (2002) proposes strategies by which to evaluate surgical protocols, which depend on rules of evidence that are tailored for surgical research. He locates room within the current rules of evidence initially proposed by Sackett (1989) for surgeons to utilize outcomes from observational studies to determine the efficacy and safety of surgical procedures that are not equipoise. "The only way to reduce the 'do it my way' approach that has plagued operative surgical research," according to Meakins, "is to define the best data and where it is seen to be absent and to do the studies required to get the answer" (2002, pp. 401–403).

To accomplish a systematic analysis of surgical research, especially in terms of the application of RCT, Meakins (2002) advocates an initial step in which the problem under consideration is reviewed systematically and exhaustively, to determine the adequacy of prior solutions and whether they make sense given current conditions. If an RCT is not possible, then observational studies that are prospective and nonrandomized must be conducted, in which outcomes are defined ahead of time. The evaluation of outcomes must be conducted by a third party to reduce bias.

Besides these more general problems medical technology also produces epistemic problems, particularly with respect to knowledge about the patient. Although Cassell agrees that today our knowledge, especially scientific knowledge, is technical, he bemoans the fact that "For medicine, the scientific knowledge and subsequent technology developed in response to the challenge posed by sickness and suffering has assumed an actuality more convincing than the reality of sick persons themselves" (1997, p. 75). The result is that technology drives a wedge in between the patient and the physician, with the physician focusing not on the patient's suffering as a person but on the patient's pain caused by a diseased body part.

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[11] Although there are limitations of applying RCT to surgical research and less than 5% of papers in surgical journals utilize RCT, still the momentum appears to be in terms of testing the quality of surgical protocols *via* RCT (Solomon and McLeod, 1995; Wente et al., 2003).

Contemporary medical knowledge and practice is often limited to the diseased part and does not include the patient’s suffering. The solution, according to Cassell (1991), is not to jettison modern medical technology but to teach physicians, whom he considers to be “the primary instruments of diagnosis and treatment,” to resist the development of technology for its own sake, to tolerate a certain amount of ambiguity and uncertainty in medical practice, and to share power with patients.

10.3 Narrative Therapeutics

Narrative looms large in the discussion of the humanistic or humane models for medical knowledge and practice, especially in terms of the epistemological analysis with respect to reasoning, judging, and explaining. Moreover, while narrative is important for diagnostic procedures it is also critical with respect to therapeutics. The physician plays a crucial role in not only obtaining a full understanding of the patient’s illness experience in order to make a correct diagnosis but also in providing an adequate or effective therapeutic protocol or procedure.

Besides a patient’s narrative of the illness experience, a physician is also called upon to provide a medical rendition of it. There is a fundamental difference between the two narratives, a difference that is important for effective therapeutics (Hunter, 1991). If that difference is not respected, especially by the physician, then the patient may not be healed fully or even adequately. Traditionally, a physician interprets a patient’s narrative by transposing or translating it into medical terms and concepts. “The medical interpretation of the patient’s story,” according to Hunter, “bears great power for healing” (1991, p. 124). As for the justification of narrative diagnostic knowledge, however, the empirical warrant for such healing power is not possible to justify epistemologically.

Part of the problem for the biomedical model is that a physician’s official, medical rendition of a patient’s narrative of the illness experience is assumed to capture completely a patient’s story for effective therapeutics. Howard Brody protests: “Physician’s should not simply assume that the medical story is the patient’s story or that no negotiation between the two stories is needed for the patient to receive the full benefit of the medical work” (2003, p. 10). Rather for Brody, as well as for Hunter and other humanistic practitioners, the physician has to pay particular attention to the meaning embedded in a patient’s narrative and to provide hope for the patient, especially in terms of a faithful and an accurate prognosis. Studies on the placebo effect, for example, demonstrate that a physician’s ability to provide an accurate account and projection of a patient’s illness significantly affects a patient’s recovery (Brody, 2003). According to Brody, “the ability to prognosticate accurately, to tell the story of future illness, maintains a sense of control and thus may symbolically, even if not pharmacologically, lead to an enhanced healing” (2003, p. 15).

Fundamentally, narrative therapeutics involves the restoration of a patient’s broken life-narrative. Hunter refers to Sigmund Freud’s analysis of his own work in psychiatry as repairing a patient’s narrative. “The patient presents a malady in both body and story," notes Hunter, "hoping for a rewriting of the narrative of illness in and through the medical narrative, an interpretation that will lead to an understanding of the symptoms and thereby to their relief and cure" (1991, p. 130).

Brody also acknowledges the importance of a physician's ability to retell a patient's story of illness, in order to provide effective therapy. "Patients come to physicians with broken stories," claims Brody, "as much as with broken bones and broken bodies" (2003, p. 16). Importantly, the retelling of a patient's story of sickness cannot be reduced to a formula, as is often the case in the biomedical model where the physician asks standard questions concerning a patient's disease story and expects only pertinent facts. "In fact, if [narrative therapy] is seen as a formula or used as a recipe," according to Gerald Monk, "clients will have the experience of having things done to them and feel left out of the conversation" (1997, p. 24). The result is that therapy is less efficacious.

Although there is no standard protocol for narrative therapy to ensure it epistemologically, especially in terms of a set of narrative questions, there is a "form" to ensure its effectiveness, especially when compared to traditional biomedical therapy (White and Epston, 1990). This form or structure of narrative therapy is composed of several different components. The first is that narrative therapy takes seriously or privileges a patient's story of illness or lived experience, rather than the universal, medicalized story of a biomedical practitioner. For in a patient's story are embedded the meanings associated with the illness that are important for therapeutic success. The next component consists of the temporal sequence of a patient's narrative, in which meaning can be reshaped.

The third component pertains to the language utilized in a narrative. Instead of the indicative mood of biomedical discourse a narrative therapist utilizes "the subjunctive mood to create a world of implicit rather than explicit meanings, to broaden the field of possibilities through the 'triggering of presupposition,' to install 'multiple perspective,' and to engage 'readers' in unique performances of meaning" (White and Epston, 1990, pp. 81–82). Associated with this dimension is an invitation for multiple readings of a patient's narrative, rather than the standard, univocal text of the biomedical physician.

The fourth component of narrative therapy involves personal, active agency. Rather than subjugating the patient as a passive agent, as in the biomedical model, narrative therapy engages the patient as an active agent in the healing process, especially in terms of revising a broken narrative. A patient's narrative reflects "a world of interpretative acts, a world in which every retelling of a story is a new telling, a world in which persons participate with others in the 're-authoring,' and thus in reshaping, of their lives and relationships" (White and Epston, 1990, p. 82). The final component involves the relative positions of physician and patient. Instead of a physician being "above" a patient, as in the biomedical model, the patient is a vital and important co-producer of the healing narrative. For narrative therapy, the patient is not objectified as in the biomedical model but rather is personalized.

Brody (2003) also argues that joint construction of the physician's and patient's stories of sickness is imperative for successful and effective therapy. To that end, he identifies four criteria required for constructing the joint narrative. The first involves the process itself for jointly constructing the therapeutic narrative. A physician-dominated story of the patient's illness is generally ineffective. "Ideally," according to Brody, "the physician's role in 'coauthorship' consists of hints, nudges, and offers of bits of narrative raw material. The patient," he continues, "is the best person to put the pieces together, in a way that allows her finally to own the resulting story, a story about what is happening in her life" (2003, pp. 16–17). Hunter (1991) also comes to a similar conclusion. She claims that physicians must restore the narrative to the patient to make it his or her own again. The next criterion is that the narrative must be in line with the best of biomedical knowledge. The narrative is not to make the patient simply feel better but to heal him or her.

The third criterion of successful narrative therapy is a patient's responsibility to own the joint healing narrative. According to Brody, "the ideal healing narrative is not merely 'I know what has caused my problem, I feel that others care that I get better, and something can be done to control what ails me.' Rather," he contends, "the ideal narrative continues, '…and I see myself actually taking the concrete steps I know to be necessary to carry out the program of treatment that I have (ideally) agreed to'" (2003, p. 17). For example, if a patient agrees that part of the healing narrative is to reduce his or her cholesterol level, then that patient must comply with that part of the healing narrative and follow the protocol(s) needed to reduce cholesterol.

The final criterion depends on whether the illness is acute or chronic. For acute illness, the joint therapeutic narrative assists in helping a patient return to a normal life which he or she lived prior to the illness. For chronic illness, the therapeutic narrative is more complex and demanding. "The patient's task," writes Brody, "is both to grieve the loss of the old life story, which now can never be completed the way the patient had intended, and also to construct a modified life story that carries on within the realities and constraints forced by the sickness" (2003, p. 17).

10.4 Summary

The biomedical approach to the generation of therapeutic knowledge and its justification is through RCT and biomedical technology. These epistemic instruments assure biomedical practitioners that their therapeutic protocols and techniques are both effective and safe. Although only a small percentage of therapeutic intervention to date is justified by these instruments, the goal is to justify all medical practice through them. The therapeutic care of biomedical practitioners then depends upon a highly technical story that is often incommensurable with a patient's existential or emotional needs story.

"Expectations of care that ignore the difference between the physician's and patient's stories," cautions Hunter, "contribute to the widespread dissatisfaction with contemporary medicine" (1991, p. 123). In response to that dissatisfaction, humane physicians practice a narrative therapy that incorporates a patient's existential or emotional needs into healing stories. Although such stories cannot be justified through the highly technical instruments used to justify biomedical therapy, narrative therapy proponents claim that its effectiveness mimics the benefits associated with the placebo effects (Brody, 2003). Consequently, narrative therapy goes a long way to relieving the quality-of-care crisis provoked by the biomedical model.

Part III
Ethics

Ethics is the study of human actions and conduct, especially associated with moral rules and principles. It is derived from the Greek word, *ethikos*, which stands for character, and it is generally divided into descriptive, normative, and applied ethics. Descriptive ethics tells us how we act and is concerned with the details of actions and conduct, without evaluating them in terms of a moral code. It is "the factual description and explanation of moral behavior and beliefs" (Beauchamp and Walters, 1999, p. 2). It is also empirical in nature, observing the choices community members make under given conditions and situations. The result is usually the identification of a code of conduct or etiquette, without moralizing as to its rightness or wrongness.

A normative ethic, however, tells community members how they should act and is based on moral values held in common. It is generally concerned with ethical theories. Analysis of the foundations underlying the various normative ethical systems and their terms, like the good or the right, is called metaethics. Metaethics is also concerned "with metaphysical questions about the nature of ethical properties and epistemological questions about how claims to ethical knowledge are to be appraised" (Solomon, 2004, p. 813). Applied ethics is concerned with appropriating a specific form of normative ethics to a particular discipline like business or medicine.

In Part III, the first chapter is concerned with axiology and the values that are foundational to bioethics. In the next chapter, I discuss the development of bioethics, especially in the United States, and the different normative ethical theories, upon which contemporary bioethics is founded. In the proceeding chapter, the notion of principlism—the predominant ethical approach to bioethics—and the four principles that compose it are examined in detail, followed by a brief discussion of the future of bioethics. In the fourth chapter to this part, I discuss emotionally detached concern on the part of the biomedical practitioner and empathic care on the part of the humanistic or humane practitioner. In a final chapter, I explore the different types of patient-physician relationships. Ethics is critical for addressing the quality-of-care crisis, since it governs the relationship between the patient and physician. This crisis in modern medicine represents a breakdown of this foundational relationship, and its resolution can only be affected by repairing the relationship.

Chapter 11
Medical Axiology and Values

Values are the foundation upon which any ethic, including bioethics, is established. The values that both patients and healthcare providers hold or subscribe to influence not only contemporary medical knowledge and practice but also the use of that knowledge and its practice. Values serve fundamentally to define not only what is of proximate—but also of ultimate—worth. They "are concepts we use to explain how and why various realities matter. Values are not to be confused with concrete goods. They are ideas, images, and notions. Values attract us" (Ogletree, 2004, p. 2540). Besides values, there are also disvalues that define what is of no value. "Disvalues," according to Thomas Ogletree, "express what we consider undesirable, harmful, and unworthy about a particular phenomenon. They identify realities that we resist or strive to avoid" (2004, p. 2540).

Basically, then, values and disvalues are what under gird human behavior and are intimately associated with human need. "Behind our passions, interests, purposive actions," claims Samuel Hart, "is the belief that they are worthwhile" (1971, p. 29). Values and disvalues serve as motivating factors in promoting or inhibiting human action. For example, the value of health and the disvalue of disease can be an incentive to eat certain foods low in cholesterol and to avoid those high in it.

The study of values and of the theories used to explicate them is the part of philosophy called axiology. "Axiology," as Barry Smith and Alan Thomas define it, "is the branch of practical philosophy which seeks to provide a theoretical account of the nature of values, whether moral, prudential or aesthetic" (1998, p. 609). Although the study of values has a long tradition within western philosophy—beginning particularly with the Greeks who examined such values as the good, the beautiful, or the virtuous—the programmatic or scientific study of values was not introduced until the late nineteenth century, especially by the Austro-German school (Smith and Thomas, 1998; Rescher, 1969).

The term axiology, which is derived from the Greek word, *axios*, meaning worth or value, did not become part of the intellectual landscape until the early twentieth century. Although axiology was marginalized during the rise of analytic philosophy, it enjoys a prominent position today is ethical theorizing (Smith and Thomas, 1998). There are a variety of values that inform the ethical stance of both physicians and patients, such as health, healing and disease prevention, helping, normality, veracity, and choice. This chapter is structured to assist in one's reflective process

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for deciding among the various axiological systems and their values. To that end, the values of contemporary medicine are examined only after first discussing the general nature of axiology and the primary question of what is a value.

11.1 Axiology

The programmatic study of values or axiology is concerned chiefly with the nature of value. It involves three tasks: "(1) the grounding of a *genetic* conception of value to provide a unified basis for the wide diversity of contexts in which the evaluation takes place, (2) the study of the phenomenology of valuation in general, and (3) the development of a system of value axiomatics codifying the universal rules of valuation" (Rescher, 1969, pp. 50–51).

The first task is divided into the objective and subjective grounds for valuation. According to objective grounding, value is like a property of an object: "Value thus has an objective basis independent of thought, emotion, and experience, with the consequence that value experiences are either appropriate (correct) or inappropriate (incorrect)" (Rescher, 1969, p. 52). According to subjective grounding, value is in the mind of the person and subject to one's desire or passion.

Another approach to the first task is the determination of intrinsic versus instrumental values. This approach is debated in terms of end-values versus means-values. The main issue is whether there is a single end-value to which all other values function as means-values. End-values are often used to demarcate major ethical systems. "What is to be valued as an end," notes Rescher, "is *pleasure* (the Cyrenaics), *happiness* (Aristotle), *knowledge* (Plato), *virtue* (the Stoics), *a good will* (Kant), *the general welfare* (the Utilitarians), and so on. These, clearly," he continues, "are all *summum bonum* theories that seek to found a monolithic, inverted-pyramid structure of value upon which all others are somehow means" (1969, p. 54). The problem is that some values do not easily serve as means-values, leaving open the possibility of more than one ultimate end-value.

The second task, the general phenomenology of valuation, involves determining what can be valued. The fundamental problem is that there are two possibilities to ground valuation: something is valued because it is valuable (objective valuation) or it is valuable because it is valued (subjective valuation). A general theory of valuation must resolve this quandary. Rescher (1969) collapses the problem, claiming that both possibilities function in valuation and must be taken into account. In this case, almost anything then can be valued.

Valuation is both relational, i.e. between a group of people and the thing valued, and rational, i.e. there must be a reason for the valuation. "When something is valued rationally," according to Rescher, "there exists, *ex hypothesi*, a reason for valuing it that constitutes a 'rationale' for its positive (or negative) evaluation" (1969, p. 57). That valuation is predominantly a rational process, for values are "inextricably bound up with the question of good reasons for preferring one state of affairs to another" (Rescher, 2004, p. 25). This rational nature of valuation forms the basis for the third task of axiology.

The third task is the identification of rules for valuation. These rules can be divided into formal and material categories. “One of the chief tasks that the Austro-German school of value theorists set for itself,” according to Rescher, “was that of devising a ‘logic of valuation’ based on the discovery of formal general rules basic to the theory of value, rules that are objective in their grounding and universal in their unrestricted applicability throughout the whole value domain” (1969, pp. 57–58). He gives examples of several of these rules, especially formulated by Franz Brentano. For instance: “When something has value, then its existence is valuable and is more valuable than its nonexistence” (Rescher, 1969, p. 58). However, these rules can be disputed as to their validity.

Material rules of valuation, on the other hand, pertain to the material composition of the object or item. There are several problems with these rules. One of the major problems is that these rules fail to “get at value-in-general, but only at value *sui generic*—the value of something as an instance of a specific kind with well-determined characteristic properties” (Rescher, 1969, p. 59). In other words, the properties of an entity can be used to evaluate entities within that category but not another entity from a different category.

Traditionally, theories of values or axiological systems are divided into subjectivism and objectivism. “Subjectivists,” according to Alan Thomas, “assert that only valuable goods are subjective states of sentient beings” (1998, p. 582). Values are based on a person’s psychological constitution and do not exist independent of the person: “the *sufficient* conditions for the difference between one experience of value and another are wholly subjective; that is, to be found in the nature of the reaction to consciousness to whatever stimulus is present” (Lee, 1940, p. 629). Evaluation is relative in nature and represents a projection of worth or significance onto an entity or event. Value then is in the eye of the beholder and depends upon a person’s feelings or emotions. One of the standard objections to subjectivism is that it makes valuation arbitrary.

Objectivists, on the other hand, claim that “there is some source or standard of value that is separate from the emotions; emotional responses to actions, character traits, or objects are prompted by, but in no way contribute to, their having value” (Halliday, 2004, p. 1536). The value of an entity or event then is intrinsic to it. There is a moderate position to this extreme form of objectivism: “Moderate objectivists would concede that value is an anthropocentric category, and that their list of good things in life must relate to human concerns. However, they would insist that these components of the good life are preferable because they are good, and not visa versa” (Thomas, 1998, p. 582). One of the problems with objectivism is that objective, sufficient conditions for identifying values are not readily palpable, which often leads to “value blindness” (Lee, 1940).

Hart (1971) provides a more refined or nuanced division of axiological systems, including axiological Platonism, axiological intuitionism, axiological emotivism, and axiological naturalism. Axiological Platonism is based on Plato’s notion of idea, in which values are Platonic ideas or “the belief in values as perfect entities or essences apart from the realm of facts” (Hart, 1971, p. 37). This type of axiology had an impact on such philosophers as W.M. Urban and Alfred North Whitehead. Axiological intuitionism is based on the intuition of values through a “developed value consciousness." "Value intuitionists," according to Hart, "believe that certain actions are known to be good or bad, right or wrong, by a direct, immediate, noninferential intuition of their ethical, nonnatural but cognitive qualities" (1971, p. 33). Two modern representations of this axiology are G.E. Moore and W.D. Ross. Axiological emotivism is based on one's feelings or desires and emotional attitude. A.J. Ayer subscribed to such an axiological system, in that values add nothing to the factual content of a statement but simply exhibit a person's emotional disposition. Axiological naturalism is based on a person's experience, with John Dewey as its chief advocate: "True to his spirit of naturalism, Dewey derives norms for valuative criticism from experience itself. The change from unreflective, impulsive, and customary value judgments to critical appraisals is the result of learning from experience" (Hart, 1971, p. 38).

Another important axiological naturalist, according to Hart, is Clarence Lewis (1883–1964), who was profoundly influenced by James and Pierce and published an influential work in 1946 called *An Analysis of Knowledge and Valuation*. Lewis divided values into intrinsic and extrinsic. An intrinsic value is that which is valuable "for its own sake," while extrinsic value is that "for the sake of something else" (Lewis, 1946, p. 392). He then divided extrinsic values into inherent and instrumental values. Inherent values refer to "those found in the experience of the object itself to which the value is attributed," while instrumental values refer to "those which are realizable in the experience of something else to which the object in question may be instrumental" (1946, p. 392). In other words, "Lewis's aim was to distinguish those things that we value because they directly give rise to experience…from those that are valued because they are means to other valued things" (Gaus, 1990, p. 127). A naturalistic view of valuation then "holds that the natural bent of the natural man stands in no need of correction in order validly to be the touchstone of *intrinsic* value. It repudiates the conception that with respect to intrinsic values we are natively incompetent, or born into sin, and can discern then justly only by some insight thaumaturgically acquired, or through some intimation of a proper vocation of man who runs athwart his natural bent" (Lewis, 1946, p. 398).

The axiological program addresses a number of important questions concerning values and value judgments. One of these is: "Is the scientific method of inquiry applicable to value judgments?" (Hart, 1971, p. 30). Although Hart did not pursue this question, others did. For example, Robert Hartman (1910–1973) developed a well known and influential scientific axiology.[1] According to Hartman, axiological science is a formal or scientific system based upon what he called "the axiom of value." This axiom states that a value like the good is not a property of an entity but rather of the notion of the entity. "It allows us," claimed Hartman, "to develop a system of axiology isomorphic with the phenomenal realm of value, and thus to specify values scientifically" (1967, p. 104).

According to Hartman, the scientific specification of value is possible because of four scientific features of the value axiom. The first is that the axiom explicates

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[1] Reaction to Hartman was at best mixed, especially within philosophical circles (Mueller, 1969).

value in logical terms, with respect to the relationship among the notion of an entity, its definition, and its referents. The next feature is that the axiom predicates values in terms of an entity's notion much like arithmetic numbers. The third feature is the axiom's "formal nature," in that the axiom "consists of variables: not of specific values but of a form which determines the specifications of all possible value" (Hartman, 1967, p. 105). The final feature pertains to value measurement. What is measured is the notion's "intension." A notion has value then in terms of the degree to which its intention is realized. Based on these features, Hartman proposed a means for specifying values formally for phenomenal experiences.[2] He envisioned that the achievement of formal axiology "will lead to the building of a new society with new people, living on higher levels of awareness and possessing undreamed of insights into the subtleties and depths of moral reality" (Hartman, 1967, p. 311).

11.2 Values

Since the notion of value is difficult to explicate precisely, axiologists have proposed a number of definitions for the notion. Rescher lists nine different definitions of value compiled by a colleague Kurt Baier. These definitions range from Howard Becker's vague definition, "Values are any object of any need," to more precise definitions, such as that offered by Philip Jacob and James Flink: values are "normative standards by which human beings are influenced in their choices among the alternative courses of action which they perceive" (Rescher, 1969, p. 2). Ralph Perry (1876–1957) provided one of the better known and influential definitions of value: "*a thing—any thing—has value, or is valuable, in the original and generic sense when it is the object of an interest—any interest*" (1954, pp. 2–3).

Recently, Bruhn and Henderson, in their study of medical values, define value as "an enduring that a specific mode of conduct is preferable to an opposite mode of conduct" (1991, p. 33). Rescher also proposes a definition of or formula for value. "*A value*," he claims, "*represents a slogan capable of providing for the rationalization of action by encapsulating a positive attitude toward a purportedly beneficial state of affairs*" (Rescher, 1969, p. 9). In other words, values are those "catch words" that motivate a person to action beneficially and provide a justification or rationalization for that action. Finally, Robert Halliday offers a definition that captures the complexity of the notion of value: "Relative worth, goodness, significance, or utility, attribute, or event; or, an intangible quality or attribute that has intrinsic worth" (2004, p. 1535).

A variety of different types of values have been distinguished, including "sensory values, organic values, personal values, interpersonal values, social values, cultural values, and spiritual values" (Ogletree, 2004, p. 2540). This list is certainly not

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[2] Hartman (1966) developed an inventory of value, which became the focus of an institute that he founded, the Hartman Institute for Axiology Studies.

complete. Organic values are particularly relevant for medicine and refer to somatic conditions, such as bodily health and integrity, while personal values include dignity and independence. Cultural values include economic, political and legal values. Social values pertain to cognitive or aesthetic interests, while spiritual values embrace various religious values such as peace and harmony.

From an ethical perspective, values are often divided into moral and non-moral. The demarcation between the two types of values is difficult except for “easy extremes: the value one places on his neighbor’s welfare is moral, and the value of peanut brittle is not” (Quine, 1979, p. 473). According to Wayne Leys, “values are moral when they inspire a recognizable feeling of oughtness or approval” (1938, p. 66). Moral values, then, are often identified in terms of rights and duties, especially in terms of obligations and prohibitions (Ogletree, 2004). These are particularly important for medicine, given its moral nature (Cassell, 1991; Tauber, 1999). A physician, for example, is obligated to treat a patient to the best of his or her ability, regardless of a patient’s moral status. This is especially acute when the patient is a known felon, such as a child molester (Klein, 1997).

Based on the obligatory nature of moral values, Quine divided them into altruistic and ceremonial: “*Altruistic* values are values that one attaches to satisfaction of other persons, or to means to such satisfactions, without regard to ulterior satisfactions accruing to oneself. *Ceremonial* values, as we might say, are values that one attaches to practices of one’s society or social group, again without regard to ulterior satisfactions accruing to oneself” (1979, p. 474). The important feature of moral values, whether altruistic or ceremonial, is their orientation towards the other and the social structure in which an individual is embedded.

Moral values are intimately steeped in a social fabric (Quine, 1979). The moral character of a society’s members is an important factor in the health and general wellbeing of that society. As a consequence, moral values must be uniform and agreed upon by society’s members. “In morality,” according to Quine, “there is a premium on uniformity of moral values, so that we may count on one another’s actions and rise in a body against a transgressor” (1979, p. 476). Without the uniformity of moral values, a society risks moral chaos and collapse.

Because of the complexity of the notion of values and their different types, their classification is tricky business. Moreover, as evident from the above discussion, values are fluid in nature and exhibit various meanings and significance under different conditions (Ogletree, 2004). Consequently, there are various classificatory schemes for the different types of values. As noted above, Lewis divided values into intrinsic and extrinsic, with the latter divided into inherent and instrumental.

Hartman also used the categories of intrinsic and extrinsic, as well as a third category—systemic. Intrinsic value is a “singular concept” in that it represents the individual or unique entity and is measured in terms of the Gestalten. He seldom referred to intrinsic value in terms of that which is valuable for its own sake.[3] Hartman provided an example of intrinsic value with the statement “I am in pain” (1967, p. 255).

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[3] Edwards points out two other uses of intrinsic value in Hartman: “an entity with non-denumerable infinity of properties” and “a non-perceptible, non-spatio-temporal entity” (1979, p. 134).

Extrinsic value refers to the value of being a member of a particular class and is measured in terms of predicates. Hartman's example was two people suffering in pain, with one suffering more than the other. Here, "two pains are judged as members of the class of pains and compared" (Hartman, 1967, p. 256). He seldom referred to extrinsic value in instrumental terms, as a means towards an end.[4] Systemic value is the most abstract in nature and is measured with respect to specified terms. His example was a patient in a particular hospital room suffering from referred pain in the sterno-cleidomastoid. The pain in this example is "not of a person but of a certain physiological and medical entity, a unit in a certain hospital room with a certain pathological symptom. Here pain is precisely determined within a network of relations and belongs to systemic value language" (Hartman, 1967, p. 256).

Besides these common classificatory schemes, Rescher (1969) identifies six additional schemes. The first is based on "subscribership" or who holds the value. Values are categorized in terms of the individuals or the various social groups who hold them. For example, an individual's value may be intelligence while a group's value may be justice. These values are subject to the "domain of applicability," in that justice can also be attributed to individuals. The next scheme is based on the features of the object valued. For example, an object may be valued in terms of its beauty or goodness.

The third scheme is based on "the nature of the benefit at issue—that is, according to the human wants, needs, and interests that are served by their realization" (Rescher, 1969, p. 16). The benefit ranges from the material, such as health, to the sentimental, such as love. The next scheme is predicated on the purpose value serves. For instance, deterrent values serve the function to dissuade others or oneself from acting in a particular fashion while persuasive values serve to recruit others to one's point of view.

The fifth scheme is based on the relationship between the subscriber and the beneficiary. The relationship may be between the subscriber and the subscriber's self or others. Values are egoistic in terms of the former relationship and they reflect disinterestedness in terms of the latter. The final scheme is the relationship among values themselves. Values are classified as either self-sufficient or primary, or subordinate or secondary. Primary values are intrinsic or end values, while secondary values are instrumental or means values.

Besides the different types and classifications of values, there is also a hierarchy of values. "Hierarchy," according to Risieri Frondizi, "should not be confused with a classification. Classification does not necessarily imply order of importance" (1971, p. 11). However, hierarchy does involve an ordering of values with respect to importance. Max Scheler (1874–1928) identified five criteria to rank values based on "a special act of value-cognition: the act of *preferring*" (1973, p. 87).[5] The first criterion is endurance: "A value is *enduring* through its quality of having

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[4] Edwards notes two other uses of extrinsic value in Hartman: "an entity with denumerable infinity of properties" and "a perceptible, spatio-temporal entity" (1979, p. 135).

[5] Scheler (1973) argued that preferring must be distinguished from choosing and willing, since it does not presume prior knowledge of the value. Moreover, he demarcated between empirical and aprioristic acts of preferring. The first refers to preferring different types of goods, while the latter refers to a priori preference of values regardless of the goods.

the phenomena of being 'able' to exist through time" (1973, p. 91). The longer a value lasts the higher it is: "the lowest values are at the same time essentially the '*most transient*' ones; the highest values, at the same time '*eternal*' ones" (Scheler, 1973, p. 92). The next criterion is divisibility, i.e. higher values do not loose their value or their value is undiminished upon division.

The third criterion is foundation: "a value B is the 'foundation' of a value A if a certain value A can only be given on the condition of the giveness of a certain value B" (Scheler, 1973, p. 94). A founding value is always the higher value, since it is not dependent or minimally dependent on other values. The next criterion is depth of contentment, not in terms of pleasure but rather in terms of "an *experience of fulfillment*; [contentment] sets in only if an intention toward a value is fulfilled through the appearance of this value" (Scheler, 1973, p. 96). The final criterion is relativity, especially in terms of a value's proximity to absolute values. According to Scheler, the closer a value is to an absolute value the higher it is.[6] Based on these criteria, Scheler ranked the value categories accordingly: "the modality of vital values is *higher* than the agreeable and the disagreeable; the modality of spiritual values is *higher* than that of vital values; the modality of the holy is *higher* than that of the spiritual" (1973, p. 110).

Finally, Hartman (1967) also ranked values, especially in terms of the notion of "richness." The systemic, extrinsic, and intrinsic value categories, "constitute a hierarchy of richness, intrinsic being richer in qualities than extrinsic value, extrinsic richer in qualities than systemic value" (Hartman, 1967, p. 114). The hierarchy is important in terms of the development of values, especially with respect to enrichment. Thus, through enrichment one moves from systemic to extrinsic to intrinsic values, with intrinsic values representing a limit. "General human value capacity, at present," according to Hartman, "does not seem to reach beyond the intrinsic—to experiences where infinities are piled up upon infinities, experiences of mystic exaltation, of higher and higher, wider and wider expansion of awareness" (1967, p. 224). In terms of the example of pain, then, the worst pain is the one I have (intrinsic value), while the second worse is the pain you or others have (extrinsic value), while the least painful "axiologically, is the one constituting, or constituted by, a system" (systemic value) (Hartman, 1967, p. 257).

11.3 Medical Axiology and Values

According to the biomedical model, medicine as a science is a value-free discipline. Values, being subjective in nature, have no place in either medical knowledge or practice, which mimic the knowledge and practice of the natural sciences.

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[6] Scheler provided a concise summary of the criteria as follows: "values are 'higher' the *more* they *endure* and the *less* they partake in '*extension*' and *divisibility*. They are higher the *less they are* '*founded*' through other values and the '*deeper*' the '*satisfaction*' connected with feeling them. Moreover, they are higher the *less* the feeling of them is *relative* to the *positing* of a specific bearer of 'feeling and 'preferring' " (1973, p. 90).

"Accepting the natural science approach to medicine," according to Paul Hoehner, "presupposes that physicians should be value neutral, i.e., completely objective, in order to prevent their therapeutic plans, diagnoses, and relationships with patients from being influenced by values, beliefs, feelings, and other 'unscientific' biases" (2006, p. 341). Traditionally, the natural sciences, if they exhibit any values, exhibit the values of objectivity and neutrality, as mentioned in the previous section.

The result of the values objectivity and neutrality for the medical sciences and clinical practice, especially in terms of medical ethics, is impartiality on the physician's part or emotional distance between the physician and patient. The physician remains aloof but still concerned to the patient's illness experience and focuses only on the disease or on the diseased body part itself. These two values certainly fueled the material success of the natural sciences, as well as of the medical sciences, especially in terms of controlling and manipulating natural phenomena such as disease and dysfunction; but, they are also responsible, in large part, for the current quality-of-care crisis in modern medicine.

Although medicine depends on science and science is traditionally a value-free discipline, medicine itself, especially the clinical practice of medicine, is not a value-free discipline, according to the proponents of humanistic or humane medicine. In fact, medicine is imbued with subjective values and is moral at its core (Cassell, 1991; Tauber, 1999, 2005). The role of subjective values in medicine is as an important component of good medical knowledge and practice (Bruhn and Henderson, 1991; Cassell, 1991; Gracia, 1999; Hoehner, 2006; Napodano, 1986; Pellegrino and Thomasma, 1981b, c; Tauber, 1999, 2005; Wright, 1987).

There are values, as well as virtues and principles, which "are central to the practice of a healing profession. In my view," opines Rudolph Napodano, "these are as much a part of the practice and theory of all of the disciplines of medicine as are the activities of diagnosis and treatment. These are the basis for the physician's conscience as it relates to his professional actions with patients" (1986, p. 52). "Physicians must engage all the values they hold," advises Hoehner, "when developing their relationships with patients. A truly value-neutral doctor," he claims, "would have no patient-physician relationship of significance" (2006, p. 342).

Pellegrino and Thomasma distinguish three ways in which values function in medicine: "in being aimed at the good of health, in being a cognitive art evaluating towards that good, and as a manifestation of a virtuous disposition concerning that good" (1981b, p. 5). As for the first function, health itself is a value that guides medical knowledge and practice, especially in terms of healing. As for the next function of values, medical theories are "value-laden" such that medicine is not concerned exclusively with a "correct" decision *vis-à-vis* the medical sciences but also with a "good" decision concerning a patient's (and a physician's) value structure. The final function involves medicine as virtue, since its aim is health as the good. Based on these three values, Pellegrino and Thomasma identify three value-principles to guide medicine as moral practice: "it is good to be healthy," "individual persons have intrinsic value," and individuals represent "a class-instance of human bodies" (1981b, pp. 9–10).

Besides health, there are a number of values, as well as disvalues, which inform medical practice. For example, Napodano lists the following "generic" values for the medical profession: “A genuine interest in, and commitment to, helping people who are sick and suffering,” “Truthfulness,” “Beneficence and primum non nocere,” “Moral agency in professional activities,” “Respect for life from beginning to end,” “A faith in self,” “Lifelong study, inquiry, and scholarship,” “An equilibrium between altruism and self-interest,” “Personal health,” “A mature and full appreciation of society and the larger, real world,” and “A willingness to give good-quality care for all who are sick and suffering” (1986, pp. 53–55).[7]

In this section, the notion of health and wellbeing as values and the disvalues of pain and suffering associated with disease and illness, respectively, are discussed. As Cassell so aptly observes: “Definitions of health and illness *always* include value judgments by a society and its individuals about what constitute acceptable dysfunctions, pains, or disfigurements” (1991, p. 154). Diego Gracia also makes the same point: “health and disease are not, as people and physicians generally thought, objective temporal facts, but cultural and historical values” (1999, p. 88).

11.3.1 Health and Wellbeing

Health, as a value, is defined in a number of different ways, especially in terms of the biomedical model. For example, Kurt Goldstein (1878–1965) defined health as a value with respect to self-actualization: “the individual’s capacity to actualize his nature to the degree that, for him at least, [health] is essential” (1959, p. 183). Goldstein also considered health a “prototype of value,” in that it is “*the* value, from which all other values experienced under special conditions become comprehensible. It acquires this significance,” he claimed, “because it guarantees man’s self-realization” (1959, p. 188). Bruhn and Henderson also define health as “a significant positive value because it provides the means by which persons can achieve what is essential and meaningful to them” (1991, p. 33). Finally, Gracia defines health in terms of happiness: “health is not only the absence of disease, that is, biological integrity, but a biographical status directly related to one’s values and one’s own idea of happiness” (1999, p. 95). These definitions of health as a value often focus on the physical and at times on the mental or psychological.

Robert Downie, Carol Tannahill, and Andrew Tannahill (1996) claim that health is both a utilitarian value and a value “for its own sake.” As a utilitarian or an instrumental value, health is chosen because it promotes or is advantageous in obtaining other goods that a person values. But the problem is defense or justification of health as a value *ipso facto*. They defend the latter claim based on several reasons. “One obvious reason for valuing health for its own sake is,” claim Downie and the Tannahills, “that disease, illness, sickness, or disability are likely to be painful or

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[7] John Bruhn and George Henderson (1991) also provide an able discussion of medical values, including health, prevention, normality, choice, healing, helping, truth-telling, and the disvalues of pain and suffering, as well as the role of religious beliefs on medical values.

unpleasant, whereas there are positive pleasures, glows of fitness and so on, which accompany the peak of health, and a sense of well-being accompanying more ordinary good health" (Downie et al., 1996, p. 174). Another reason involves the fulfillment of a divinely appointed plan for the person as embodied. In other words, God created humans and their bodies to be healthful and so health is a primary value. A related but secular reason: "It might be said that it is incumbent upon us as human beings to make our human nature flourish" (Downie et al., 1996, p. 175). Health then is to be valued for its own sake *vis-à-vis* the innate forces of growth and maturity. Finally, "the idea that health is a value," claim Downie and the Tannahills, "involves an aesthetic view of health…health is an ideal design with which we should try to make our bodies conform" (Downie et al., 1996, pp. 175–176).

In order to ground medical ethics on a philosophy of medicine, Pellegrino and Thomasma make health the primary value both for the practice of medicine and for medical ethics. "As a fundamental need of living organisms," according to Pellegrino and Thomasma, "health can be said to be an absolute, intrinsic value, common to all class-instances of living bodies" (1981b, p. 8). Health then is normative, in the sense that it is the "evaluative factor" by which all other values in medicine and medical ethics are arranged hierarchically. "Even though health is subject to a variety of interpretations," admit Pellegrino and Thomasma, "the principle *that it is good to be healthy* could function as a norm in medical ethical decisions" (1981b, p. 8). To that end, as noted above, they derive three axioms and discuss three implications of them in grounding ontology for medical ethics.

In reaction to Pellegrino and Thomasma's position, Kazem Sadegh-zadeh (1981) developed an alternative theory of values for medicine. He claimed that health is not an absolute value but a relative one. Sadegh-zadeh proposed what he calls an "antithesis" to Pellegrino and Thomasma's universal thesis of health: "Health cannot be said to be a universal human absolute value and a universal human intrinsic value" (1981, p. 111). He gave two proofs, taken from his own clinical experience, for his antithesis. The first was a number of patients who simply wanted to die and refused treatment. The second proof consisted of a poll of 25 persons, with two who were ill, in which the participants were asked to determine whether health as a value for them was extrinsic, intrinsic, relative, or absolute. Only the two ill persons choose health as an intrinsic value. Health as a value, as for any value, then is relative to a person's circumstances: "That something is a value or disvalue of any kind or value-free for a person at a given time, is subject to value kinematics caused by any change in her/his states of affairs space, action space, epistemic space or deontic space. Thus a human's values, disvalues and value neutralities cannot be separated from the particular history and context of her/his life. The valuation of health is no exception" (Sadegh-zadeh, 1981, p. 112).

In response to Sadegh-zadeh's critique, Pellegrino and Thomasma (1981c) claimed that their original intention was not to defend health as an absolute value for all occasions. To that end, they explicated health as a value utilizing Hartman's distinction of value as intrinsic, extrinsic, and systemic or systematic, along with the distinction of absolute and relative:

(1) *As absolute intrinsic value*: health as a bodily need of a living organism, the good of a body *qua* body, without which the body cannot function or survive.
(2) *As a relative extrinsic value*: health as a comparative value ranked by agents among other valued state of affairs…
(3) *As absolute extrinsic value*: health as an end of the physician-patient relationship, the best interests of the patient, the good end sought by those who are ill and promised in the act of profession by the physician.
(4) *As relative systematic value*: health as one value ranked by a decent society among other goods to be procured.
(5) *As absolute systematic value*: health as a norm or standard to be achieved by public health programs or hospitals, or in scientific judgments about disease (Pellegrino and Thomasma, 1981c, pp. 339–340).

As Pellegrino and Thomasma acknowledged, this health scheme is artificial and that these definitions of health as values overlap in the real world. Ultimately health is a moral value, since it can be measured in terms of the good.[8] “Within the context of medicine,” concluded Pellegrino and Thomasma, “health functions as a value in several distinct, inter-related ways that influence what is, or is not, morally justified behavior for patient, physician, and society” (1981c, p. 340).

For the humanistic or humane models of medical practice and ethics, wellbeing and its associated notion wellness serve as a, if not the, primary value. Wellbeing includes not only physical health as a basic need but also psychological and social health. “Health,” according to James Griffin, “is always…a necessary condition of living a good life” and therefore an important component of wellbeing (1986, p. 296). But health is only one component, as he recognizes.[9] Other values may intercede, especially as desires that trump a basic need. Moreover, people may lead a good life or have over all wellbeing even though they suffer from disease and physically healthful people may suffer from unrecognized illness. All these scenarios are possible because wellbeing is of greater value than simple physical health, even a positive notion of health. The value of wellbeing depends upon the subjective values to which a person subscribes. The notions of wellness and subjective wellbeing are two models for capturing the larger notion of a good life as the primary value.

The notion of wellness, as a value, is based on a subjective model of health (Larson, 1991). Halbert Dunn (1896–1975), for example, championed wellness as a more expansive notion, which includes the holistic and spiritual as well as the preventive or positive, compared simply to physical or mental health. He coined the phrase “high-level wellness” to achieve this aim. Dunn defined high-level wellness accordingly: “*an integrated method of functioning which is oriented toward maximizing*

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[8] Downie and colleagues also claim that health is a “moral value in such a way that people who cherish health are to be approved of and people who squander it are to be disapproved of” (Downie et al., 1996, p. 175).

[9] Griffin, in fact, lists five “prudential” values, including accomplishment, components of human existence like agency and liberty, understanding, enjoyment, and deep personal relations, that are necessary for determining when “the demands of health are fully met” (1986, p. 52).

the potential of which the individual is capable, within the environment where he is functioning" (1977, p. 9). Wellness is a dynamic concept as opposed to the standard notion of health and is applicable not only to an individual but also to society. Dunn envisioned the emergence of a social "personality" and a world culture.

For achieving wellness, Dunn dissected human nature into five areas and lists 12 needs that must be fulfilled, including survival, communication, fellowship, growth, imagination, love, balance, environment, communion with the universal, way of life, dignity, and freedom and space (1977, p. 12).[10] "The challenge posed by the concept of high-level wellness," Dunn concluded "is how to achieve its ends within everyday living and for mankind as a whole" (1977, p. 16). To that end, a journal called *Health Values: Achieving High Level Wellness* was inaugurated in the late 1970s to promote Dunn's ideas.[11]

Wellness became a fad in the 1970s that continues today, especially in terms of lifestyle changes with respect to eating healthfully and exercising regularly. Part of the appeal of the "wellness revolution," according to Peter Conrad, is its moral underpinning particularly in terms of being a chief value for the virtuous: "In modern society, where health is such a dominant value, the body provides a forum for moral discourse and wellness-seeking becomes a vehicle for setting oneself among the righteous" (1994, p. 398).[12]

Ed Diener and colleagues have also recently championed another notion of wellbeing, subjective wellbeing (SWB), as one of the chief values for health: "we believe that subjective well-being is one value among many, but one that is widespread because it allows people to judge their own lives based on their own values and standards" (Diener et al., 1998, p. 36). Diener and his associates polled people in terms of their evaluations of what constitutes a good life. "We believe," opined Diener and colleagues, based on their data, "that subjective well-being results from people having a feeling of mastery and making progress toward their goals, from one's temperament, immersion in interesting and pleasurable activities, and positive social relationships" (Diener et al., 1998, p. 34).

From a review of the literature, Diener (2000) identified three key factors involved in SWB. The first and most important is adaptation. Several studies reveal that the majority of people adapt to either positive or negative events and return to a base line SWB. The next factor is personality or temperament. Studies show that a person's SWB is to a large extent dependent upon heredity. The final factor is goals or expectations, which are influenced by one's environment.

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[10] The five areas composing human nature, according to Dunn, are "his totality, his uniqueness, the organization of the energy at his disposal, the inner and outer worlds in which he lives, and the interrelation of self-integration and energy use" (1977, p. 10).

[11] The journal is now called *American Journal of Health Behavior* and no longer serves to promote exclusively Dunn's notion of high-level wellness.

[12] "Wellness seekers," Conrad claims, "create a morality of the body in terms of what is good and bad. Actions regarded as good for the body are lauded while actions deemed bad for the body are to be avoided" (1994, p. 393).

Moreover, the more flexible a person is with respect to goals and expectations the greater his or her SWB. In conclusion, Diener called for more research into the nature and state of SWB in order to "create a better society where happiness is ubiquitous" (2000, p. 41).

Downie and the Tannahills critiqued SWB, claiming that it relies too much on subjective feeling and not on objective criteria. SWB "may arise from influences which are overall detrimental to an individual's functioning or flourishing, and/or to society" (Downie et al., 1996, p. 18). They gave the example of narcotic administration to elevate a person's mood. Furthermore, a critical objective analysis of wellbeing must take into account "the basis of feelings of well-being. We argue that true well-being involves and reflects a quality which we shall refer to as empowerment" (Downie et al., 1996, p. 19).

Empowerment or autonomy entails four values: self determination, self government, sense of responsibility, and self development (Downie et al., 1996, pp. 164–165). Empowerment provides a structured notion of wellbeing in contrast to SWB, especially in terms of achieving the "good life" or a life of flourishing. Unfortunately, SWB is part of the biomedical model's attempt to provide a quick fix for health problems, as opposed to the health promotion model that Downie and the Tannahills advocate: "the biomedical approach to health tends to involve the subjective sense of well-being since it can be drug-induced, whereas the health promotion approach, with its stress on 'being all you can be', must assume the…'good life' sense" (Downie et al., 1996, p. 20).

11.3.2 Disease and Illness

Biomedical practitioners define disease and its associated pain in terms of facts, i.e. the material and physical, with little if any reference to values. Disease and pain are value neutral or if there is any value to them it is inconsequential. Humanistic or humane practitioners, on the other hand, consider illness and its associated suffering to be value-laden or disvalue-laden terms. "Physicians," according to Leon Eisenberg, "have been taught to conceptualize diseases as abnormalities in the structure and function of body organs and tissues. But," he continues, "patients suffer illnesses; that is, experiences of disvalued changes in states of being and in social function" (1988, pp. 198–199).

Illness and the suffering that results from it are social terms and ideas that depend upon the values society places upon them. It is this evaluation then that a person learns and that thereby influences the response of an individual to his or her condition. Recently, however, philosophers of medicine argue that just as health and wellbeing are values that motivate people to act in certain ways, so are the disvalues of disease or illness and pain or suffering. These disvalues are moral in nature with respect to the bad, just as health is a moral value in terms of the good. In other words, disease and illness are negative evaluations of bodily conditions.

Traditional interest in the notion of disease and the language to articulate this notion are "mainly concerned with epistemological and metaphysical questions such as the nature of disease and the status of disease language in clinical practice and medicine science…The problem of disease and disease language thus has taken on [in contemporary discussion] a predominantly ethical coloring" (Agich, 1983, p. 27). Agich works out this ethical dimension in terms of the role of values in articulating the nature of disease. Ethical values are important for determining the very nature of disease itself, especially in terms of illness and sickness.

Values function not only in the actual diagnosis of the patient's diseased state but are also important in the illness the patient may suffer or the sick role society confers on the diseased or ill person. "The language of disease," according to Agich, "necessarily involves evaluation and value judgment about what compromises the proper and desirable human conditions. Essential to this condition is freedom; hence," he concludes, "values are both implicitly and explicitly implicated in the common use of disease language" (1983, pp. 37–38). Given that freedom is the main value concerning the human condition, the disvalue then of disease, illness, or sickness is the loss of freedom. One of the chief disvalues of illness is the loss of freedom to act in a familiar world (Toombs, 1993).

A key component to the notion of disease and illness as primary medical disvalues is the notion of human dignity. Daryl Pullman (2002) divides human dignity along two poles of a continuum. At one pole is basic human dignity, which is inherent to every person. This sense of dignity represents a moral absolute that cannot be diminished by disease or illness. At the other pole is personal dignity, which "is tied to personal goals and social circumstances, to a sense of who one is as an individual in the social world" (Pullman, 2002, p. 76). This sense of dignity then is subjective in terms of personal feelings and contingent upon external factors. Both disease and illness in terms of compromised integrity detract from a person's overall dignity, especially in terms of both a person's health and overall wellbeing. The pain associated with an acute disease and especially the suffering of chromic illness cripples the person and robs him or her of the ability to achieve his or her maximum potential *qua* human being.

A sense of dignity is based on a notion that choice defines human dignity (Pullman, 2002). Loss of choice is then equated with loss of dignity: "in a society that values independence and self-sufficiency the life of dignity, as defined by this culture, is often lived alone…On this view the dignified response in the face of suffering is to go it alone. Those who lose their independence or the control of bodily functions, are often viewed with disgust by both themselves and others" (Pullman, 2002, p. 89). In contrast, human dignity should be based not on choice and independence but on an aesthetic of meaningful and loving relationships: "The beautiful life—the life of dignity—is expressed in the caring relationships we share with one another" (Pullman, 2002, p. 89).

Paradoxically, disease and pain can be positive values for a person. After all, it is pain that is an adaptive mechanism alerting a person as to a somatic problem and it alerts the person to present danger that may lead to further pain and damage. In some respects disease and illness are more a primary (dis)value of medicine than health or wellbeing, in that disease or illness is what motivates a person to seek medical attention in the first place.

Gotthard Booth also interprets disease as a positive value from a psychosomatic perspective. He claims that disease is a message or as one commentator claims, “disease is a message of the whole person” (Slater, 1981, p. 100). “Psychosomatic medicine,” according to Booth, “suggests that disease has a positive, spiritual aspect, too. It is an unconscious self-revelation of the limitations of individuality… In this respect, each case of disease must be considered not only an evil to be fought, but also a reminder of the purpose of life. By this I mean,” he continues, “that that all human actions and efforts aim toward something which transcends the achievements in this world” (1951, p. 18).

Booth later articulates the positive value of disease and its treatment in terms of what he calls “a psychotherapeutic maxim: Do not overvalue your spontaneous idiosyncratic image of the world. The more you live in a too one-sided fashion, the more you are likely to be forced by disease to sacrifice your over-differentiated function” (Booth, 1962, p. 315). In other words, disease keeps us humble before the mystery of the world and counsels us not to excess.

11.4 Summary

Pellegrino and Thomasma claim that “the axiology of medicine is in too primordial a state…Clearly, one task of the philosophy of medicine is the formal and extended elaboration of value theory” (1981c, p. 340). To the establishment of a medical axiology, Pellegrino proposes the following goals: “[Medical axiology] would deal with the tensions in human values created by the progress of medicine itself; it would define how medicine might contribute to restructuring and resynthesizing a value system for contemporary man. And,” he concludes, “it would define those values which should determine the social and personal behavior of every physician” (1979a, p. 211). Although Bruhn and Henderson’s enumeration of the various values that animate medicine goes a long way to developing the field, it fails to provide the needed theoretical basis for further development of a medical axiology. The question arises as to whether medical knowledge and practice are unique enough to warrant a specific axiology. The consensus seems to be that they are, although there is certainly dissent concerning that position.

“Health,” according to Gracia, “is a moral enterprise, exactly because it is not a natural predicate but a value” (1999, p. 95). The important question then is whose moral terms and values are to be used to determine the nature of health and disease. He distinguishes between two levels at which values function: the private and the public. Health begins with private values, especially in terms of what constitutes the ideal health for the individual. “Health,” argues Gracia, “is an ideal, a moral ideal that everyone must achieve in accord with his or her own system of values” (1999, p. 98). He identifies the private values with the ethical principles of autonomy and beneficence and the public values with the ethical principles of justice and nonmaleficence. Although health and the moral life begin with these private values, these values can be trumped by public values if and when conflict between them arises. Society must apply its public values across the board to achieve equity, otherwise injustice results. He concludes: “the question is whether or not we must understand the crisis of the concept of health as a crisis of our system of values and of our moral ideals” (Gracia, 1999, p. 99). It is that crisis of health and ultimately of values that contributes to the larger quality-of-care crisis. In the remaining chapters, the crisis of care is examined with the crisis of values in the background.

Chapter 12
Origins of Bioethics and Normative Ethics

Medical ethics has a long and rich tradition (Cantrell, 1997; Jonsen, 2000). "Physicians, occupying a special place in society, have always faced ethical challenges," observes Robert Cantrell, "and many of them have studied ethics and strived to develop ethical standards and to live by them" (1997, p. 447). As medicine developed over the centuries, so did the complexity of the ethical issues associated with its knowledge and practice.

Mirroring this development in ethical complexity was a development in the expressions to denote the nature and role of ethics in medicine. These expressions include—to name a few—medical or clinical ethics, bioethics, biomedical ethics, and healthcare ethics. Each of these expressions was introduced into the literature at specific moments in medical history because of particular events and circumstances, although there is considerable overlap in their usage. In general, medical or clinical ethics covers an earlier time period, with bioethics, biomedical ethics, and healthcare ethics representing a more recent time period.

In this chapter the rise of bioethics is reconstructed first, followed by a discussion of the various normative ethical theories as they relate to medical practice. Normative ethics is a twentieth century notion, which under went considerable develop during the century. For example, G.E. Moore (1873–1958) positioned normative ethics between casuistry and metaethics and focused on the question of the kinds of the good rather than on questions of the particular good or on the meaning of the good (Solomon, 2004). Today, normative ethics is more expansive in scope. For example, it involves "substantive proposals concerning how to act, how to live, or what kind of person to be" (Kagan, 1998, p. 2).

How a person should act is based on the moral values and principles that a person holds. By understanding what is of value morally or to what moral principles a person subscribes, why and how a person acts as he or she does and why or how a person should act can be better explored and understood. Moreover, these values and principles are often used to justify morally a person's actions. Because actions are under girded by different values and principles there are a variety of ethical theories, each with its own particular advantages and problems. Finally, ethical theories are key to addressing the quality-of-care crisis since much of that crisis has an ethical or a moral basis.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

12.1 Origins of Bioethics

Bioethicists trace their roots back to the Greeks, especially to Hippocrates (460 BC–370 BC), whose Oath in some form is still recited by graduating medical school students (Amundsen, 2004a; Ficarra, 2002; Jonsen, 2000).[1] The Oath, although not thought to be authored by Hippocrates, is the social contract—at least in contemporary American medicine—that defines the ethical dimensions of medical practice. However, comparison of the ancient text with modern versions reveals considerable differences in the texts (Graham, 2000). The Oath was typical for the times in which it was written: "it begins by calling the divinities of health as witnesses, makes a promise of fidelity to one's teachers, lists six behaviors that the oath taker binds himself to avoid, and ends with acceptance of the rewards and punishments entailed by observance or violation of the precepts" (Jonsen, 2000, p. 4).

Other ethical injunctions are found in the Hippocratic corpus. The most widely recognized is found in the *Epidemics I*, which is thought to be authored by Hippocrates. In that text, the following statement is made: "As to diseases, make a habit of two things—to help and not to harm" (Jonsen, 2000, p. 2). This moral maxim is a command, which also represents the style of the Oath: "The tone of the maxim is clearly deontological: it issues an order" (Jonsen, 2000, p. 3). The Hippocratic tradition was important for the development of medical ethics until the late medieval ages, when it was combined with Christian values (Amundsen, 2004b, c). Although the tradition did not have a significant impact during the Renaissance, there was a revival of it during the Enlightenment (Cook, 2004; Smith, 1979).

The Hippocratic tradition was clearly important for the development of early ethical codes for medical practice. And those codes were concerned with ethical issues that arose from the bedside and the physician's character and behavior. "However, if we wish to understand the development of specifically modern codes of medical ethics," according to Ivan Waddington, "we must look not to ancient Greece, but to nineteenth-century England, and in particular, to the work of Thomas Percival [1740–1804], whose *Medical ethics*, published in 1803, marks an important break-point between ancient and modern medical ethics" (1975, p. 36).[2] Percival's motivation for composing an ethic was "that the official conduct, and mutual intercourse of the [medical] faculty, might be regulated by precise and acknowledged principles of urbanity and rectitude" (1975, p. 65). To that end, he devised principles of conduct for general practice, as well as for hospitals and ancillary institutions. In his medical ethics, Percival characterized ethical practice in terms of a contract between physicians as caregivers and the larger community (Haakonssen, 1997).

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[1] Dale Smith (1996) distinguishes three functions of the Hippocratic Oath for modern medicine, including delineation of professional duties, a public statement concerning medicine's moral character, and affirming medicine's ethical heritage.

[2] Waddington recognizes that Percival was just one of many physicians concerned with the ethical issues raised by late eighteenth and early nineteenth century physicians.

In the United States, physicians adopted and modified Percival's code; and, in 1847 the newly formed American Medical Association (AMA) used it to develop a national ethical code of practice (Jonsen, 1998). That code was revised several times again in the early twentieth century. During each revision, the ethical rules and principles became fewer in number, until the code became an instrument for maintaining "professional cohesion and respectability" rather than ensuring the patient's welfare (Jonsen, 1998, p. 8). During the late nineteenth century, the AMA attempted to establish the primacy of its brand of medicine. By the early twentieth century, it succeeded through supporting legislation to control medical practice and drug sales. "Medical ethics during this area appeared to some critics," according to Cantrell, "to be more concerned with limiting the practice of medicine to 'orthodox' physicians and to establishing a medical monopoly rather than with regulating behavior" (1997, p. 448).

The AMA was successful in establishing its "orthodox" monopoly, with emphasis on scientific medical knowledge and practice, but at the expense of ignoring the physician's character and behavior. The results have been disastrous, even though many medical miracles were developed during the twentieth century. For example, in Tuskegee, Alabama, a study was conducted to follow the natural history of syphilis (Jones, 1981). Around 400 African American men diagnosed with the disease were left untreated, even though antibiotics were later available. The study ran from 1932 to 1972, when it was abruptly ended after a governmental committee ruled the study unethical. The publicizing of the study in the early 1970s profoundly affected the American public. "The revelations," according to Jonsen, "seemed to bring the horrors of the Nazi medical experiments, which many had judged as impossible in the United States, into our benign scientific and medical world. The ethics of research, which had been under quiet scrutiny for a decade, burst forth into public view" (2000, p. 109).

In the early 1970s the term "bioethics" appeared under two very different contexts that gave rise to two diverse connotations.[3] Besides the abuses in medical research, such as the Tuskegee study, a number of other medical advances, especially in terms of manipulating conception and reproduction and of delaying death, inspired the development of a new ethics to help guide the application of these technological advances.[4] "By the late 1960s," according to Judith Swazey, "an important element in the changing social context of biomedical research was a diminishing of the once strong conviction that such research would be an unqualified good for human health and welfare. A variety of biomedical research analysts and commentators, journalists, members of Congress, and in turn the general public," she adds, "began expressing concerns about the possible negative social, ethical, legal, economic, and political implications of new and prospective advances in areas such as behavioral control, genetic engineering, and human experimentation, as well as organ replacement" (1993, p. S5).

Indeed a number of people felt the need for ethical reflection on modern medical advances, which were developed under the aegis of the biomedical model.

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[3] Warren Reich (1994) proposes a "bilocated birth" for the term bioethics: by Potter in Madison, Wisconsin, in 1970, and by André Hellegers in Washington, DC, in 1971.

[4] Jonsen (1998, 2000) lists over a dozen events that were instrumental in the founding of bioethics, including renal and heart transplantation and oral contraceptives.

As David Thomasma explains: “modern medical care conceals a dangerous ethic that encourages treating persons as [objective] things” (2002, p. 335). The response to this dangerous ethic was felt so keenly by so many, that bioethics sprung up at a variety of institutions. Probably the best known are the Institute of Ethics, Society and the Life Sciences, founded in 1969, and now known as the Hastings Center, and the Joseph and Rose Kennedy Institute for the Study of Human Reproduction and Bioethics, founded in 1971, and now known as the Kennedy Institute of Ethics (Jonsen, 2000; Reich, 1996).

The cancer biologist Van Potter developed a second rather broad conception of bioethics, which, according to commentators, did not have an immediate impact on the development of bioethics as a discipline. Potter’s concern was for an ethic that connects humans to their natural environment, a concern he acquired from the ecologist Aldo Leopold (1887–1948). Potter called for a “science of survival” in which biological facts and ethical values are fused through wisdom for the common good. “A science of survival,” according to Potter, “must be more than science alone, and I therefore propose the term ‘bioethics’ in order to emphasize the two most important ingredients in achieving the new wisdom that is so desperately needed: biological knowledge and human values” (1970, pp. 127–128).

To that end, Potter (1971) proposed a “bioethical creed” that consisted originally of five beliefs and their attendant commitments to achieve them. The creed focused on the relationship of humans to their environment and to each other, in order to enhance the survival and flourishing of all. In 1988, Potter extended his original notion of bioethics to include human health. This expanded version he called “global bioethics.” “Global bioethics,” according to Potter, “is proposed as a secular program of evolving a morality that calls for decisions in health care and in the preservation of the natural environment” (1988, pp. 152–153). To that end, he slightly modified the beliefs and commitments of the original creed and added the additional beliefs and commitments concerned with personal and family health.

Edmund Pellegrino divides the development of bioethics into two stages, with an initial proto-bioethics stage from 1960–1972. The proto-bioethics stage represents an effort to “humanize” medical knowledge and practice. Abraham Flexner, he notes, had earlier warned that medical education must include the humanities to temper the medical student’s scientific education. The next stage is a philosophical era of professional bioethics, which lasted from 1972 to 1985. According to Pellegrino, “the subjects of discourse centered on the theoretical substratum for bioethics—principlism, deontology, utilitarianism, virtue, casuistry, feminism, caring, narrative, or some combination of these theories” (1999, p. 82). It is during this period that bioethics became a discipline and part of academia proper. The third stage, which dates from 1985 to the present, Pellegrino calls global bioethics. The term “global” conjures up Potter’s early denotation of bioethics, but, according to Pellegrino, goes beyond it even in terms of scope. “The breadth of issues and the breadth of disciplines now embraced by bioethics,” according to Pellegrino, “become evident in the work of committees and consultations. Here,” he continues, “ethical issues are often inextricably entangled with psycho-social, economic, legal, and religious issues” (1999, p. 84).

12.2 Normative Ethics

There are a variety of taxonomies for categorizing the different normative ethical theories. For example, Beauchamp and Walters (1999) and Beauchamp and Childress (2001) divide normative theories into general and practical categories. "*General normative ethics*," according to Beauchamp and Walters, "attempts to formulate and defend basic principles and virtues governing the moral life" (1999, p. 2). This category contains the traditional theories, such as utilitarianism and virtue ethics. Practical normative ethics is concerned with the development of handy rules and guidelines.

David Solomon (2004), however, divides normative ethics into three categories: virtue, deontological, and consequentialist theories. They are based on the three key features of human action: agent, action, and consequences. "Virtue theories," according to Solomon, "take judgments of agents or persons as most basic; deontological theories take judgments of actions as most basic; and consequentialist theories take judgments of consequences as more basic" (2004, p. 814).

In this section, a continuum-taxonomy is utilized to categorize normative ethical theories (Honer et al., 1999). According to this taxonomy, normative ethical theories range between two poles: absolutism and relativism. Absolute ethical theories, such as deontology, divine command theory, or natural law theory, are based on reason or divine or natural law and are objective in nature. Relative ethical theories, such as ethical subjectivism, cultural ethical relativism, and ethical egoism, are based on personal feelings, cultural authority, and self-interest. Absolute theories are more or less discovered by humans, in such cases as natural law, while relative theories are constructed and represent human inventions and conventions. In between these two poles are other ethical theories, such as consequentialism and utilitarianism, and situation ethics, which have features of both poles. Finally, virtue ethics and evolutionary ethics, which are not as easily classified in terms of actions or rules, represent ethical theories that are important in medical practice.

12.2.1 *Absolute Ethical Theories*

At the absolute end of the pole are the objective ethical theories, such as deontology, divine command theory, and natural law theory.[5] Objective theories claim that there are absolute moral values and ethical norms or absolute rules that are separate and

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[5] Rational choice ethics is another objective ethical theory. It also depends upon a reflective, reasoning agent who is particularly free, impartial, and informed. Only free agents, who are not conditioned or controlled, are able to make the best choice as to how to act. Agents must also be impartial, without regard or bias for oneself or others. The choice must be best for all who choose it. Finally, an informed agent is one who understands the alternatives for acting and their consequences. A rational choice ethic, then, overcomes the biases of parochial, cultural perspectives and relativism and "provides the most likely basis for reaching eventual agreement about values across a cross-cultural level" (Honer et al., 1999, p. 168). One problem with this ethical system is that very few people can attain, if ever, such an enlightened and free state. We are products of our culture and it is questionable whether a society can indeed be freed from its cultural heritage to embrace another culture's moral system.

independent from personal and social perspectives. These values and norms or rules are universal and binding for all cultures and all situations: “An absolute rule is exceptionless, that is, what the rule prescribes is morally decisive and cannot be overridden by other considerations” (Boyle, 1998, p. 72). The general form of such rules is: “Actions of type T are never (always) to be performed in circumstance C” (Solomon, 2004, p. 815). For example, a physician should never exploit his or her position or authority to kill an innocent human being.

For deontological theories the sources are rational laws, while for divine commandment and natural law theories they are religious authority and natural laws, respectively. The motivation for these theories is “*conscientiousness*—that state of character that disposes persons to follow rules punctiliously, whatever the temptations may be to make an exception in a particular case” (Solomon, 2004, pp. 815–816). Although these theories function to determine the moral state of some actions, there is considerable debate over the ethical or moral nature of other actions, especially in medicine such as in the case of euthanasia of patients with incurable illnesses or of the sacrifice of human embryos for stem cell research. The major problem with absolute theories, except for one formulation of the divine command theory and the Thomistic natural law theory, is that they are based on a particular type of rationality from a specific historical period—the Enlightenment. In today’s postmodern world that rationality does not carry the same authority as it once did. Moreover, absolute theories based on natural law and religious authority depend upon interpretation, which requires a cultural and hermeneutical context.

12.2.1.1 Deontological Theories

“Deontological normative theories,” according to Solomon, “take moral judgments of action as basic, and they regard the fundamental ethical task for persons as one of doing the right thing—or, perhaps more commonly, of avoiding doing the wrong thing” (2004, p. 815). Doing the right thing or avoiding the wrong thing is to perform one’s duty or obligation by following an absolute rule. “Modern deontology,” notes Michael Slote, “treats moral obligations as requirements that bind us to act, in large measure, independent of the effects our actions may have on our own good or well-being, and to a substantial extent, even independent of the effects of our actions on the well-being of others” (2004, p. 796). In other words, deontological theories are nonconsequentialist ethical theories and the moral worth of an action is defined by whether it is performed from a sense or by reason of duty (*deon*) rather from an agent’s desire to achieve a particular end or goal.

Kant (2002) developed the most widely recognized and influential deontological ethical theory. He utilized reason rather than one’s emotions or desires to justify absolute moral rules, which he called the categorical imperative. These rules are categorical in that they admit no exceptions and are imperatives in that they represent commands. Kant contrasted the categorical with the hypothetical, in that the latter pertains simply to the conditions that must be met to achieve a particular desired end or goal. The hypothetical imperative, then, claims that if a person wants to achieve a particular end or goal then that person must take a specified course of action. Kant's categorical imperative eliminates the conditional antecedent. A person must take this course of action regardless of one's desired goal or end. For example, a physician must treat patients not to win their business or praise but simply because it is the right thing to do.

There are several problems with Kant's deontological ethics. First, he provided no means by which to adjudicate among moral absolutes when they conflict with one another. Kant's categorical imperative "is [simply] too rigid to be realistically used in everyday life" (Card, 2004, p. 30). For example, should a physician confronted by a person who wants to commit suicide because of a fatal illness, which is causing untreatable and intolerable pain and anguish, help that patient? On the one hand, there is the Kantian categorical imperative not to commit suicide; but, on the other hand, there is the command to respect a person as an end and not as a means to a particular categorical imperative like not committing suicide.

Another problem with Kant's deontological ethics is whether absolute rules should be followed constantly or absolutely. For example, if a physician feels that telling a patient the truth about his or her illness condition would jeopardize the patient's wellbeing then should the physician obey the absolute rule not to lie? Finally, morals may depend more on emotions or the heart than on duties or the head: "patients do not want caregivers to view them simply as 'duties' for whom they are responsible as professional…[but rather] as unique persons for whom caregivers have some genuine human feeling" (Tong, 2007, p. 16).

12.2.1.2 Divine Command Theory

Whereas deontological theories, like Kant's, are motivated by reason, religious-based absolute theories, especially illustrated by the divine command theory, are not. According to proponents of the divine command theory: "Moral status M stands in dependency relation D to divine act A" (Quinn, 2000, p. 53). This dependency relation is generally expressed in terms of divine commands. In other words, it is a divinity or God who determines what is morally right or wrong and communicates this to humans through ethical commands: "Whether something is right or wrong is a perfectly objective matter: it is right if God commands it, wrong if God forbids it" (Rachels, 1986, p. 41). Through commandments, then, like the Decalogue found in the Old Testament, God provides a moral standard for how a person is to act and behave morally.

Traditionally, there are two broad formulations of the divine command theory based on Plato's analysis of the notion of the pious in the *Euthyphro*: "Is the pious being loved by the gods because it is pious, or is it pious because it is being loved by the gods?" (1997, 10a). The first formulation is a strong version of the divine command theory, which states that actions are right because God commands them. The problem with the strong version of the divine command theory is that morality ends up being capricious and vacuous: "God's judgments are based on 'raw' approval, meaning that God has no reasons for commanding what He commands apart from the fact that He commands it!" (Card, 2004, p. 13). Or, God may have reasons but we are not privy to them. In any case, morality then is not based on an action's nature or on any particular reason.

The second formulation of the divine command theory is a weaker version, which states that God commands the actions because they are right, or, at least, "what God commands is coextensive with what is right" (Wierenga, 1983, p. 387). In other words, morality and ethical standards are independent of God. Harris (2003) calls this formulation the "Shared Moral Universe of God and Humanity" and provides several interpretations of it, in that God's commands are—or even God's will is—not necessary and sufficient conditions for morality. He also provides an epistemic interpretation, which states that there is some possible moral knowledge apart from God's commands. Finally, Harris articulates a more robust version of this formulation: "Not only is morality totally independent of God, but God is bound by it: He ought not to do or command what is immoral" (2003, p. 22). In other words, God created the moral structure of the world and chooses not to act contrary to it.

Although the weaker version of the divine command theory appears to avoid the problem of the first formulation, by conferring a moral acceptability onto an act not through its being commanded but through the inherent nature of the act, a significant problem with this version arises: the moral nature of the act itself transcends the very nature of God. But, if God is all knowing and perfect then this formulation is inconsistent with the nature of God. So, there is a dilemma with these two formulations of the divine command theory: either the moral standards depend upon God's command and humans must obey regardless of reason, or the moral standards are supreme and God is less than perfect. The dilemma is avoided by proponents of the divine command theory by claiming that "if perfection is of God's essence, then God wills perfectly in accord with the correct moral principles" (Card, 2004, p. 15). In other words, God is not subordinate to moral principles and still their author.

12.2.1.3 Natural Law Theory

While rejecting the divine command theory, proponents of natural law theory take advantage of that theory's second formulation: that there is a natural goodness built into the universe. For example, Thomas Aquinas claimed that God created the universe, including morality, with a natural purpose or design to achieve a particular end or *telos*.[6] "The divine plan," according to Daniel O'Conner, "pre-exists and controls the world as the architect's plan pre-exists and controls the construction of the building he has designed. The eternal law is thus," he concludes, "God's wisdom directing the movements and actions of his creatures in their appropriate ways" (1967, p. 59). The natural law is then a reflection of this eternal law, as it serves God's ends and purposes.

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[6] The traditional Thomistic natural law theory runs counter to the best in contemporary scientific thinking. According to modern science, particularly modern evolutionary science, the universe, including the moral nature of humans, is not evolving according to a divine plan or endpoint but rather blindly and without purpose.

Natural law theory is teleological in nature (Card, 2004). God endowed humans with practical reason, in order to determine these natural purposes or laws: "Just as nature operates in conformity with natural laws—'laws of nature'—so there are natural laws that govern how we should behave" (Rachels, 1986, p. 45). The task of moral philosophy is to determine or identify the natural/moral laws that govern human actions. Moral philosophy, then, is guided not by capricious divine commands but by the purpose or end that God built into the natural world.

Contemporary natural law proponents develop natural law ethics based not on an explicit religious belief in God who created natural law but rather on specific basic human goods that are used to define the morally right. The fundamental principle of this version of natural law ethics is an absolute proscription of actions directed against one of these basic goods. For example, John Finnis (1980) provides a list of goods that includes life, knowledge, play, aesthetic experience, sociability (friendship), practical reasonableness, and "Religion." These goods are not moral goods *per se*, but rather they are important for what he calls "human flourishing" (Finnis, 1980). Germain Grisez (1983) also provides a list of goods, which he divides into two categories.[7] The first represents the reflexive or existential goods, which include, e.g. self-integration and religion or holiness. The second category denotes the nonreflexive or substantive goods, which include life itself, knowledge of truth and appreciation of beauty, and activities of skillful work and of play.[8]

The fundamental issue for natural law ethics is how to move from the basic human goods to specific moral choices. According to Grisez, that task is accomplished through what he calls the "first principle of morality": "*In voluntary acting for human goods and avoiding what is opposed to them, one ought to choose and otherwise will those and only those possibilities whose willing is compatible with a will toward integral human fulfillment*" (1983, p. 184). Derived from this principle are "modes of responsibilities," which are prohibitions to limit oneself in order to achieve fulfillment *vis-à-vis* the basic goods.[9] These modes function as a bridge from the fundamental moral principle to act in accord with the basic goods to everyday ethical concerns and problems. The outcome is the formation of a moral life in terms of integral human fulfillment, "in which all the human goods would contribute to the fulfillment of the entire human community" (Grisez, 1983, p. 222).

Russell Hittinger (1987) offers an insightful analysis and criticism of what he calls the "Grisez-Finnis natural law system."[10] His major concern is with the teleological

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[7] Grisez (1983) initially divided goods into sensible and intelligible. The former refers to emotional desires, while the latter refers to those goods that are judged good *vis-à-vis* human fulfillment or perfection. Basic human goods are intelligible goods.

[8] Over time, Grisez altered the list. For example, an eighth good, "marriage and family," which "is both substantive and reflexive in its different aspects," is added (Grisez and Shaw, 1991, p. 56).

[9] For a list of the modes, see Grisez (1983, pp. 225–226).

[10] Hittinger justifies the combination Grisez-Finnis, since "Grisez and Finnis have coauthored an article in response to critics, and have thus publicly identified their common stake in the system" (1987, p. 8).

nature of contemporary natural law ethics based on human goods. “Grisez and Finnis would have us strike an alliance with the goods,” according to Hittinger, “even though there is no good reason to believe that either the goods or humanity itself enjoys an overarching telos” (1987, p. 178). His next concern is with the “fullness” of the Grisez-Finnis theory in terms of basic human goods. Grisez and Finnis do not develop a complete or comprehensive theory of the goods, in that they do not develop “a nonarbitrary principle for coordinating the goods,” with the effect that “morality is subject to mere ad hoc arrangements” (Hittinger, 1987, p. 181).

Hittinger also asserts, *contra* Grisez and Finnis, that “the human subject is something more than the sum of the parts of the goods which are pursued” (1987, p. 185). The reliance of Grisez and Finnis on a truncated notion of the self is inadequate to justify the self’s openness towards God. “At the very least,” according to Hittinger, “we need a theory of the moral subject, and its capacity for self-transcendence, as a propaedeutic to the problem of supernaturality” (1987, p. 185). Finally, Grisez and Finnis take too many short cuts in the development of their natural law ethics: “A natural law theory must show how nature is normative with respect to practical rationality. This has not been accomplished by the Grisez-Finnis method” (Hittinger, 1987, p. 192).

12.2.2 Relative Ethical Theories

At the relative pole are the theories of ethical subjectivism, cultural ethical relativism, and ethical egoism. Ethical subjectivism is a system based on the relative values of a specific individual, while cultural ethical relativism is based on the relative values of a particular culture. According to Tong, “subjectivists and cultural relativists are driven to their respective positions by their desire not to be ethical ‘know-it-alls’ or cultural imperialists who mistaken their particular moral views for the absolutely right moral views for everyone, everywhere” (2007, p. 7). In other words, how one should act is determined either by one’s feelings or by what the culture says. Ethical egoism is relative to one’s self-interest.

The fundamental problem with relative ethical positions is that the truth of a value does not necessarily follow from a person’s or a society’s feeling or belief, or from a person’s self-interest. The assumption that a person or a society knows the right course of action is essentially indefensible. History is replete with examples of persons and societies who thought they acted ethically but did not. Also, Tong rejects these positions as “wrong headed” and claims that the refusal of relativists to make an ethical judgment, e.g. the abuse or torture of children as wrong or immoral, as a “deleterious conversation stopper” (2007, p. 7).

12.2.2.1 Ethical Subjectivism

Ethical “subjectivism works from the basic belief that morality is not grounded in reasoning, and therefore states that a person’s feelings or beliefs are the only possible means for morally justifying an action" (Card, 2004, p. 6). The individual person is the ground for his or her ethical stance; there is no higher authority. Thus, if a physician believes that it is right to lie to a patient, e.g. concerning the state of a patient's illness, then lying is morally justifiable. There is no external standard by which to judge whether an action is morally acceptable; rather, there is only that standard internal to a person's ethical sensibilities.

There are two types of ethical subjectivists: existentialists, who stress the individual's experience, and linguistic theorists, who stress an emotive theory of values (Honer et al., 1999). Existentialists claim that value judgments cannot be justified but simply asserted, while linguistic theorists claim that value judgments reflect the emotional use of moral terms.

There are several problems with subjectivism (Card, 2004). First, subjectivists do not criticize ethical decisions according to a moral code: "The only possible way that a person's actions are judged as wrong on ethical subjectivism is if he acted in a way inconsistent with his own beliefs" (Card, 2004, p. 7). Another problem is that a subjectivist need not be tolerant of another's ethical position, if he or she does not feel like being tolerant. This is paradoxical in that ethical subjectivism stresses the primacy of the individual but cannot guarantee it for others.

Finally, ethical subjectivism is ineffectual for providing a comprehensive explanation for morality. In other words, it cannot justify one action over another. For example, a physician who participates in assisted suicides simply because he or she feels it is the decent thing to do cannot justify such action morally. In conclusion, "While our feelings about the morality of performing an action posses some importance, the implications of considering them as the basis of morality are deeply problematic and hence ethical subjectivism is an unacceptable moral perspective" (Card, 2004, p. 7).

12.2.2.2 Cultural Ethical Relativism

Cultural relativists claim that ethical values depend upon social authority and that there are no universal values true for all cultures; rather, values are justified by what that culture believes or asserts. In other words, "This view holds that an action is morally right if it accords with the norms of that person's culture, and morally wrong if it does not" (Card, 2004, pp. 7–8). For example, if a physician engages in assisted suicide and if such activity goes against that physician's cultural norms, especially in the United States, then the physician acts immorally according to his or her culture. However, if the physician moves to another culture or country, such as the Netherlands or Belgium, where such activity is moral and legal, then he or she acts morally. The advantage of cultural relativism over subjectivism—particularly from an objectivist's position—is that at least a person's action may be judged immoral, if it does not conform to the person's cultural standard of acceptable moral behavior.

Although cultural ethical relativism does permit some type of moral judgment, there are still problems with it. The major problem is how to define a culture. A culture is generally heterogeneous in nature and there may be significant variation in terms of moral codes within any given culture. Moreover, a professional society may have ethical norms that vary with other subcultures within a society or with the larger society itself. The issue here is the autonomy and authority of a particular subculture, like medicine. For example, abortions were performed illegally for decades in the Untied States until legalized. And yet within that society there are those who would like to overturn the legality of abortion. Are these reformers immoral? According to cultural relativists, they are. But can a society's legal system or even its majority rule define what is morally acceptable given the diverse subcultures within a society, especially the pluralism now present in the United States? The simplicity of the cultural relativists view cannot address the moral nuances or complexity of this question: "Cultural ethical relativism lacks the resources for dealing with conflicting practices within a culture stemming from multiple cultural memberships" (Card, 2004, p. 11). Thus, most ethicists have rejected this moral system.

12.2.2.3 Ethical Egoism

Ethical egoism, like ethical subjectivism and cultural ethical relativism, is close to the relativistic pole and, like subjectivism, focuses on the self for justifying its ethics. However, whereas ethical subjectivists claim that ethical choices are justified by what a person endorses, ethical egoists claim that these choices are justified by what profits or benefits a person (Card, 2004; Rachels, 1986; Regis, 1980). In other words it is based on self-interest, which a person generally attempts to maximize. Ethical egoists do not claim that everyone acts in terms of self-interest, which is the position of psychological egoism, but that everyone should act in terms of one's self-interest. The fundamental principle of this ethical position is to do what is best for the individual self, regardless of what happens to others because of those actions.[11]

Kurt Baier (1991) distinguishes between a strong and a weak form of ethical egoism. The strong form states that it is "always right (moral, praiseworthy, virtuous) to aim at one's own greatest good, and…never right, etc., not to do so," while the weak form states that it is "always right to do so, but not necessarily…right not to do so" (Baier, 1991, p. 201). In other words, according to the strong form it is morally good to maximize one's self-interest and morally wrong not to do so, while according to the weak form it is again morally right to maximize one's self-interest but not necessary morally wrong not to do so. Finally, ethical egoism is often contrasted with ethical altruism, which states that a person's actions should benefit the other even if it is to the detriment of one's own wellbeing.

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[11] There are three forms of ethical egoism: individual, personal, and universal (Thiroux, 1998). Individual ethical egoism is the position that everyone should act in my self-interest, while personal ethical egoism is the position that I should act in my self-interest without making any demands on what others should do. Many ethicists deny that these two forms of egoism are adequate ethical theories, since they cannot be generalized. Only universal ethical egoism is defended as a true ethical theory: "*everyone* should always act in *his* or *her* own self-interest, regardless of the interests of others, unless their interests also serve his or hers" (Thiroux, 1998, p. 38).

A major problem with ethical egoism, as with ethical subjectivism and cultural ethical relativism, is that the truth or practicality of an ethical choice does not necessarily follow from one's self-interest, in that it is to some extent arbitrary (Rachels, 1986). For example, behaving in such a way to maximize one's self-interest in the short run may have deleterious results in the long run. Proponents of a weak form of ethical egoism argue that one's actions can benefit another incidentally. For example, Thomas Hobbs (1588–1679) embraced such a form of ethical egoism in which a person acts to benefit others because in the long run it is beneficial to that person, even though in the short run it may not be.

A second major problem is the "paradox of egoism": "unrestricted pursuit of self-interest by everyone produces a state of affairs contrary to the egoist's self-interest" (Harris, 2007, p. 65). In other words, ethical and moral chaos is the result of everyone acting in one's own best interest. Take for example a pharmacist who dilutes cancer drugs in order to amass a multi-million dollar fortune (Card, 2004). What is really problematic for ethical egoism is that both the moral rightness and wrongness of the pharmacist's action are defensible. Another major criticism is that ethical egoism leads to an inability to resolve conflicting self-interests, which often require some type of moral guidelines or rules (Baier, 1958; Rachels, 1986). Moreover, ethical egoism is inconsistent with the helping professions, such as medicine, since obviously "a highly self-interested attitude would not serve one well in these professions" (Thiroux, 1998, p. 41).

Edward Regis (1980) identifies another crippling problem with ethical egoism: it fails to satisfy the constraint on seeking self-interest that does not result in harm to others. According to Edwards, a more robust form of ethical egoism should meet three conditions: "(a) it must emphasize pursuit of self-interest…(b) it must neither require such pursuit to be the exclusive or only end of action, nor that one do all those actions which might be to one's interest…and (c) it must deny that positive action for the good of others is morally obligatory" (1980, p. 60).

Edwards next proposes an ethical egoism that he claims satisfies these conditions: "the view which holds both that one ought to pursue one's well-being and happiness, and that one has no unchosen moral obligation or duty to serve the interests of others" (1980, p. 61). His form of ethical egoism does involve self-interest that is not necessarily one's only main goal and that rejects the need to further others' self-interest. Although Regis' ethical egoism leaves open the problem of unintended harm, it is constrained by the ethical egoist acknowledging that everyone is an "end-in-themselves" and that their rights as such must be respected.

12.2.3 Consequentialism and Situationism

There are two other normative ethical theories that fall in between the two poles of absolutism and relativism—consequentialism, and the related theory of utilitarianism, and situationism (Honer et al., 1999). Consequentialism exhibits features of both absolute and relative ethical theories. It is absolute since it requires that the level of satisfaction be empirically determined or tested, while it is relative since the values that support it depend on subjective human satisfaction. However, it is more aligned with the absolute rather than the relative theories, since it is primarily dependent on empirical determination of the level of satisfaction. The best known form of consequentialism is utilitarianism, which takes happiness for the greatest number to be the greatest moral good.

Situationism or situation ethics also exhibits both features of absolute and relative ethical theories. It is absolute since most situational theories subscribe to a single moral rule, while it is relative since it is culturally or socially dependent for its context. However, situationism is more aligned with the relative rather than the absolute theories, since it is primarily dependent on the social context. In this section consequentialism and utilitarianism are discussed first, followed by situationism or situation ethics.

12.2.3.1 Consequentialism and Utilitarianism

Traditionally, "*Consequentialism* is a moral perspective that holds that only the consequences or results of one's actions matter intrinsically" (Card, 2004, p. 24). In other words, for consequentialist theories the value of the consequences of one's actions justifies their moral worth. Moreover, these actions should benefit not just the person performing them but must also benefit as many persons as possible. The consequentialist's "crucial ethical task is to act so that one will bring about as much as possible of whatever the theory designates as most valuable" (Solomon, 2004, p. 816). Morally, the "whatever" is the good, which can either be instrumental or intrinsic. The intrinsically good is that which is good *per se* because of what it is, while the instrumentally good acts to bring about the intrinsically good.

Consequentialist theories are concerned with maximizing the intrinsically good for the greatest number of people. Although the instrumentally good may help at times to bring about the maximal amount of the good, it may at times do so immorally such as in the case of a trivial lie. Moreover, consequentialist theories are generally divided into act or rule types. Act consequentialism states that a person should perform an action that results in the greatest good for the greatest number of people, while rule consequentialism states that a person should follow those moral rules that maximizes the greatest good for the greatest number.

The best known and highly recognized form of consequentialism is utilitarianism (Thiroux, 1998). Utilitarianism is generally associated with John Stuart Mill (1806–1873), who wrote a short book entitled *Utilitarianism*, although Jeremy Bentham (1748–1832) formulated the first modern adaptation of the utilitarian principle for revising the British legal system. James Mill (1773–1836), John Stuart's father was a supporter of Bentham and John Stuart read Bentham works and also became a supporter (MacKinnon, 2007). Utilitarianism is derived from the word "utility," which means usefulness towards a specific end. The traditional principle of utilitarianism, as formulated by Bentham and later developed by Mill, claims that the ethical or the good is what produces the greatest utility or usefulness for the greatest number of people. In other words, utilitarians claim that whatever maximizes utility is morally right.

Bentham defined utility specifically as the "property in any object, whereby it tends to produce benefit, advantage, pleasure, good, or happiness…or…to prevent the happening of mischief, pain, evil, or unhappiness to the party whose interest is considered" (MacKinnon, 2007, p. 61). Bentham then articulated the principle of utility as the "principle which approves or disapproves of every action whatsoever, according to the tendency it appears to have to augment or diminish the happiness of the party whose interest is in question" (MacKinnon, 2007, p. 61).

Mill later revised and clarified Bentham's principle as a moral standard to include not just the agent's utility or happiness in question but that for the greatest number of people: "for that standard is not the agent's own greatest happiness, but the greatest amount of happiness altogether; and if it may be possibly doubted whether a noble character is always the happier for its nobleness, there can be no doubt that it makes other people happier, and that the world in general is immensely a gainer by it" (MacKinnon, 2007, p. 68).

The substantiation of utilitarianism depends upon what John Dewey (1859–1952) calls the "test of consequences," i.e. an act must be justified by the empirical evidence (Honer et al., 1999). To that end, utilitarians attempt to measure the amount of utility or happiness an act produces. Calculation of utility depends on a number of factors, including "the net amount of happiness, its intensity, its duration, its fruitfulness, and the likelihood of any act to produce it" (MacKinnon, 2007, p. 52). The decision between two acts *vis-à-vis* its morality depends upon calculating which act results in the greatest amount of happiness for the greatest number.

For Bentham, the quantity of utility was sufficient to determine the moral nature of an act, while for Mill the quality of the utility must also be considered in the calculation. According to Mill, people would rather be a person dissatisfied than a pig satisfied. "The point of the argument," claims MacKinnon, "is that the only reason we would prefer a life of fewer net pleasures (the dissatisfactions subtracted from the total satisfaction of a human life) to a life of a greater total amount of pleasures (the life of a pig) is that we value something other than the amount of pleasure; we value the kinds of pleasure" (2007, p. 54).

There are several problems with utilitarianism, as evident from some very troublesome questions critics have raised about it. For example, how does one define human utility or happiness that is acceptable to a majority? And then how does one calculate optimal utility? The calculation of utility assumes realistically a great many variables, besides the factors listed above, such that "no one can consider all of the variables that utilitarianism requires us to consider" (MacKinnon, 2007, p. 54). In other words, utility is a complex notion that must take into account not only objective factors but also subjective ones. Moreover, does not the definition of utility or happiness depend on the values of a specific group? What type of empirical evidence can be obtained that defends a particular value that is not already laden with that value? Also, the question arises as to whether one should sacrifice one's own happiness or pleasure for the common good; for, "not to give some preference to ourselves is an affront to our personal integrity" (MacKinnon, 2007, p. 55).

Moreover, does one give to the poor to such an extent that one becomes impoverished?

A final, troubling question is whether the end always justifies the means. Since utilitarians justify an act (means) in terms of the consequences (ends), it is conceivable that one can morally justify an end even though the means is immoral. Take for example a medical experimentation in which researchers used mentally challenged children to test the effectiveness of an immunization protocol for hepatitis (Harris, 2007). Although the researchers obtained permission from the children's parents, they divided the children into groups in which both received the hepatitis virus but one with optimal immunization treatment and the other with suboptimal treatment. The suboptimally treated group contracted hepatitis but survived after the disease ran its course. When the study was published, the public reaction was outrage. The researchers justified their actions, claiming that the knowledge gained from the study would benefit a great number of children who would be exposed to the virus. But this rationalization did not appease the public outcry: "Many people objected that the children had been 'used' in a morally unacceptable way" (Harris, 2007, p. 120). Critics of utilitarianism argue that the end, although beneficial for children who might contract hepatitis, could not be justified by the means, using mentally challenged children.

In response to this problem, many utilitarians distinguish between act and rule utilitarianism. "Act utilitarianism," according to Harris, "judges the morality of an action by whether the action itself produces the most utility, or at least as much utility as any other action" (2007, p. 127). The problem, as noted above, is that an act might be immoral, such as lying or stealing, but is tolerated because of the large amount of utility it generates for the greatest number of people. Rule utilitarianism is proposed to rectify this problem by advocating moral rules to determine the morality of an action. "Rule utilitarianism," according to Harris, "judges the morality of an action by whether the moral rule presupposed by the action, if generally followed, would produce the most utility, or at least as much utility as any other rule" (2007, p. 127). One of the major problems with this type of utilitarianism is whether it is possible to formulate rules that apply to every situation without exception (Thiroux, 1998).

12.2.3.2 Situation Ethics

Situation ethics or situationism is concerned not with the agent performing an action, or the action itself, or even the action's consequences, but with the context or situation in which the decision to act is made. "It claims," according to Solomon, "that one should approach the resolution of particular moral problems by eschewing all general action guides in favor of concentrated attention to the details of the particular situation" (2004, p. 822). In other words, situationism claims that ethical and moral choices depend upon the context or situation in which people find themselves. In that respect, it is relative.

On the other hand, situationism is absolute in that ethicists such as Joseph Fletcher, the best known advocate of situationism, claim that there is one absolute moral value—love. According to Fletcher, "situation ethics has only one norm or principle or law (call it what you will) that is binding and unexceptional, always good and always right regardless of circumstances. That is 'love'—the *agapē* of the summary commandment to love God and the neighbor" (1966, p. 30).

Although love is the principle upon which Fletcher bases all ethical choices and decisions, it is not used to produce a static ethical system but rather a dynamic and developmental one, especially since situations can change and morph dramatically. Moreover, situationists welcome change in their ethics, rather than resisting it, with love as the guiding principle: "Each person, therefore, must make a personal decision in situations of moral importance and do the best she can with the knowledge and experience at her command to act as a concerned, loving person" (Honer et al., 1999, p. 167). In other words, situation ethics or the "new" morality, as Fletcher called it, is more flexible than the "old" morality or legalism based on traditional moral rules. However, it is not as relative in nature as antinomianism; rather, it is situated in between these two positions (Fletcher, 1966).

Fletcher distinguished six propositions or principles, for the situationist, which are at the center of ethical decision making. The first is: "Only one 'thing' is intrinsically good; namely, love: nothing else at all" (Fletcher, 1966, p. 57). Love is the end-value towards which all other values are means-values. The next proposition is: "The ruling norm of Christian decision is love: nothing else" (Fletcher, 1966, p. 69). For Fletcher love "replaces" the law, and he quoted Augustine (354–430) to defend his position: "*Dilige et quod vis, fac* (Love with care and *then* what you will, do)" (1966, p. 79). The third is "Love and justice are the same, for love is justice distributed, nothing else" (Fletcher, 1966, p. 87). Love requires prudence and careful thought to ensure its actions are just.

The fourth principle is: "Love wills the neighbor's good whether we like him or not" (Fletcher, 1966, p. 103). Love is not sentimentality but rather an attitude that takes into consideration the neighbor's good. The next proposition is: "Only the end justifies the means; nothing else" (Fletcher, 1966, p. 120). For a situationist, like Fletcher, "to will the end is to will the means," even if it leads to an immoral act under the "old" morality (1966, p. 133). The final proposition is: "Love's decisions are made situationally, not prescriptively" (Fletcher, 1966, p. 134). In other words, the morality of an action is not located within the action itself but rather in its context.

Situation ethics caused a considerable public stir during the late 1960s and early 1970s, especially with the publication of Fletcher's book. Many of the critics took exception to Fletcher's six propositions. For example, Robert Fitch claimed that love and justice are two separate principles. Christianity's commandments discriminate love from justice, while situationism "liberates like a demolition bomb more than it gives birth like an act of creation" (Fitch, 1968, p. 118). Fitch fainted at the evil committed in the name of love, throughout history.

The proposition to come under severest criticism, however, was number 5. John Montgomery, in a public debate with Fletcher, charged that: "If a situation ethicist, holding to the proposition that the end justifies the means in love, tells you that he is not lying, can you believe him?" (Fletcher and Montgomery, 1972, p. 32). Moreover, others argued that "a good and 'loving' intention does not guarantee a good and desirable outcome" (Davis, 1990, p. 2). For example, although the intention of physicians, who treated pregnant women with thalidomide in the early 1960s, was good the result was disastrous.

Finally, critics claimed that the contextual flexibility of situation ethics is nothing more than simple relativism, since love is too ambiguous a notion to act as a moral guide (Honer et al., 1999). Moreover, Augustine's dictum on "love and do what you will" fails to recognize that Augustine did not consider love as a sufficient condition for moral action, since some actions *per se* are immoral (Outka, 1998). By the 1980s the debate over situationism subsided, although there are some who claim that valuable lessons may still be learnt from this ethical position (Outka, 1998).

12.2.4 Alternative Ethical Theories

Besides these ethical systems that focus on the ethical acts and rules, there are alternative ethical systems that must be examined, especially because of their use by bioethicists. These theories include virtue ethics and evolutionary ethics. Each of these theories focuses more on the agent, whether its character or its phylogeny.

12.2.4.1 Virtue Ethics

Virtue ethicists focus on the character or virtue of a moral agent. The issue is not so much which moral rule or value to follow in what particular context or even the consequences of one's actions, but rather it is what kind of person one wants to become or what kind of traits or virtues would a moral agent have or exhibit.

Virtue ethics was initially developed by the Greeks, especially Aristotle who, in the *Nicomachean Ethics*, divided virtues into intellectual and moral. He identified various intellectual virtues, including *sophia* or theoretical wisdom and *phronesis* or practical wisdom. The moral virtues include such virtues as bravery, justice, prudence, and temperance. For Aristotle, a virtue is a mean between two extremes: "Now it is a mean between two vices, that which depends on excess and that which depends on defect" (2001, 1107a3). For example, compassion is the mean between heartlessness on the one hand and lenience on the other. The result of leading a virtuous or moral life, according to Aristotle, is *eudaimonia* or a state of flourishing. Finally virtues are the result of well formed habits, which society nurtures. The result is a person who by habit of character wants to live a moral life.

Virtues loomed large in ethical understanding, especially during the middle ages with Thomas Aquinas, until the Enlightenment, when ethicists began to focus on the act rather than the person. The two dominant approaches to ethics in the ensuing centuries were consequential and deontological ethics (Oakley, 1998). However, in 1958 Elizabeth Anscombe challenged, in her influential article "Modern moral philosophy," the hegemony of these two approaches. She argued that consequential and deontological ethics are inadequate to ground ethics. Rather, she made a clarion call for grounding ethics and morality on virtues. Other philosophers, such as Alasdair MacIntyre and Philippa Foot took up the challenge.

The contemporary virtue ethics project involves two programs (Louden, 2006). The first is a critical program, in which virtue ethicists criticize the consequential and deontological approaches. The criticisms focus on the over dependence of these approaches on legalism, rationality, and formalism for making moral choices. The second program is constructive in nature and focuses on issues surrounding the defining, justifying, and applying of virtues to moral situations.

What then is virtue ethics? Virtue ethics "holds that the character of the moral agent, the virtue he or she has, [is] of fundamental importance to ethical conduct" (Jansen, 2000, p. 262). Although there are a variety of contemporary virtue ethics, Justin Oakley (1998) identifies six common features that define them and distinguishes them from consequential and deontological ethics. The first is that a right or moral action is determined or justified by what the virtuous person would do in a given situation. The next feature is that what constitutes the good of a specific action or in a particular situation must first be established before what is moral or right can be determined.

The third feature of virtue ethics is that the "intrinsic goods embodied in the virtues cannot be reduced to a single underlying value, such as utility, but are plural" (Oakley, 1998, p. 90). The next feature is that virtues are objectively good in that their goodness is determined by human characteristics. The fifth feature is that virtues are agent-relative rather than agent-neutral, as for consequentialism. The final feature is that "acting rightly does not require agents to bring about the very best possible consequences they can. Rather," claims Oakley, "many virtues ethicists argue that we ought to aspire to a level of human *excellence*" (1998, p. 91).

A common critique of virtue ethics is that virtues depend upon a specific culture or a particular ethical system; thus, it is to a large extent relative (Honer et al., 1999). In other words there is no single virtue or set of virtues that can be applied to all situations, within a given context. Moreover, given the ambiguity of the notion of virtue it is unclear whether virtue can function to provide the necessary guidance to decide the morality of a situation. For example, two virtues may compete with one another, as when a friend asks about an article of clothing. One may be honest and tell the friend it is not flattering, or one may be kind and say it looks fine not wanting to hurt the friend's feelings. Rachels and Rachels call this the problem of incompleteness. "The admonition to act virtuously," they claim, "does not, by itself, offer much help. It only leaves you wondering which virtue takes precedence" (Rachels and Rachels, 2007, p. 189).

Besides the problematic nature of virtues, there is also the problematic nature of the virtuous agent as moral: "there is a plurality of virtuous character traits, and not all virtuous people seem to have these traits to the same degree, so virtuous people might not always respond to situations in the same way" (Oakley, 1998, p. 93). Moreover, appeal to a virtuous moral agent is insufficient for justifying the moral nature of an act. Take for instance the "benevolent" physician who withholds the truth about a patient's terminal cancer and asks the family to participate in the deception.

Virtue ethics is enthusiastically appropriated for both bioethics and medical practice. For example, Rosalind Hursthouse (1987) utilizes virtue ethics to analyze the moral issues associated with abortion. P. Gardiner (2003) champions virtue ethics for resolving medical moral dilemmas, such as the sale of organs or the traditional Jehovah's Witness case involving blood transfusion. Peter Toon (2002) also advocates virtue ethics for medical practice, in general: "virtues are the qualities needed to flourish in the practice of medicine" (2002, p. 695).

Not all commentators are enthusiastic about virtue ethics for bioethics and medical practice. In response to Toon, for example, Diane Reeves (2002) claims that virtue ethics is inadequate for medical practice and for resolving medical dilemmas. She notes that Toon relies on moral rules to resolve medical problems. Lynn Jansen (2000) is also less than sanguine about the application of virtue ethics to medicine. Jansen argues that although virtues play a role in medicine it is subsidiary to the role of duties and rules.[12] Virtue ethicists make traditional ethicists uneasy, since no context-independent ground is available to stand on rather only a slippery slope.

12.2.4.2 Evolutionary Ethics

Evolutionary ethics has a rather ignoble past (Ruse, 1993). Although Charles Darwin (1809–1882) provided a robust mechanism for biological evolution, in terms of natural selection, the application of this mechanism to ethics has been less than successful. One of Darwin's enthusiastic supporters, Herbert Spencer (1820–1903) utilized a Darwinian adaptation known as "survival of the fittest" to promote Social Darwinism. Spencer based his evolutionary ethics on *laissez-faire* individualism and progressivism. "He believed," according to Michael Ruse, "that liberty is a moral good because it will promote happiness and, therefore, one has an obligation to maximize liberty inasmuch as one can" (1993, p. 136).

The mechanism of Social Darwinism depends on non-interference from government with a society's liberty and its progress. This cashes out in removing social programs that aid the non-fit, at the expense of the fit. The non-fit, as Social Darwinists fear, reverses progress rather than supports it. Critics such as Thomas Huxley (1825–1895) argued vigorously against Social Darwinism; but its greatest critic, G.E. Moore, asserted that it commits a "naturalistic fallacy." In other words, one cannot move, as David Hume (1711–1776) argued, from "is" to "ought."

Evolutionary ethics or Social Darwinism fell into disrepute during the first-half of the twentieth century, especially after the atrocities of the Second World War, only to be revised in the second-half by sociobiologists (Ruse, 1993, 2006). For example, Edward Wilson makes a clarion call for ethics to be "biologicalized" (1975, p. 27). Wilson champions a program to account for ethics or why humans do the good, or even should be good, in terms of natural selection, especially at the

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[12] In defense of Toon from Reeves' criticism, Gervase Vernon (2003) argues for a convergence of virtue ethics and deontological ethics for resolving ethical problems in medicine.

level of genetic selection. In other words, morality is the result of natural selection in that it confers a selective advantage for survival.

Although the natural bent of an organism is towards selfishness, especially in terms of food and sex, co-operativeness allows humans to fair even better than going it alone. This co-operativeness, according to sociobiologists, is then parsed out in terms of morality, nothing more. As Ruse argues for this "new" evolutionary ethics: "ethics might be simply a collective illusion of our genes, put in place by natural selection to make humans into good cooperators" (2006, p. 480). Anthony O'Hear (1997) takes exception to the "new" evolutionary ethics, claiming that ends such as truth and beauty have little to do with selective adaptation and may even interfere with it.

To date evolutionary ethics is not widely applied to medicine, for various reasons. Kenneth Calman (2004), for example, argues that values are critical for medical ethics and practice. For Calman, the issue of evolutionary ethics involves the type and degree of changes in these values. He claims, for instance, that the core values, like human rights, are not changing, even though there is substantive change in peripheral values that influence medical ethics and practice. For example, he cites changes in peripheral values pertaining to genetic cloning and screening and in organ transplantation that are reshaping the medical landscape. "In essence," according to Calman, "new knowledge indicates what we *can and could* do. The question which is raised," he challenges, "is whether we *ought and should* do it" (2004, p. 368).

Enthusiasts of evolutionary ethics address the above challenge, especially in terms of changes in the core values of medicine that reflect the changes in society's core values. Evolutionary ethicists are critical of those who fail to analyze the changes in the social values that then define medical practice. Not to do so, would be to expose the profession to the blind forces that shape and define society. For Calman, however, core values are essential in that they define the nature of medicine: "Values give coherence to professional groups and give a sense of purpose, and a way of seeing and monitoring standards. They define the profession" (2004, p. 370). To change these values, if at all, requires careful consideration so as not to loose the compassion and care patients require.

12.3 Summary

A major problem with the various competing ethical theories is how best to determine which one is adequate for bioethics and medical practice, especially in terms of the quality-of-care crisis. For example, some ethicists champion one of the consequentialist theories that endorses the patient's welfare as the primary aim in ethical deliberations and medical practice, while other ethicists prefer one of the deontological theories that promotes a duty or rule to the exclusion of consequences. Moreover, other biomedical ethicists promote one of the other ethical theories for specific reasons germane to that theory. However, there is no consensus as to which ethical theory could meet the needs for deliberating over bioethical conundrums. That solution—at least for some—came in the form of principlism, the topic of the next chapter.

Chapter 13
Principlism and the Future of Bioethics

Because of the problems associated with competing normative ethical theories, some bioethicists attempt to subvert or resolve these problems by finding an alternative approach. One approach is to ground ethical decision making not on any one ethical theory, since consensus cannot be achieved, but on ethical principles. According to Donald Ainslie, "despite differences at the level of theory, they [bioethicists] could agree at the level of principles. The different theories converge on the same set of principles" (2004, p. 2100). In this chapter, principlism, as this approach came to be known, is examined beginning with its introduction into the biomedical literature in the mid to late 1970s, followed by its rapid appropriation by bioethicists.

Although principlism should resolve the quality-of-care crisis, especially with its emphasis on autonomy, it actually seems to have acerbated the crisis with a "sick autonomy" (Tauber, 2005). Criticisms of principlism are also examined, along with a defense proffered by its adherents. I finally explore the alternatives to principlism, including deductivism, common morality, casuistry, and narrative ethics. The chapter concludes with a brief discussion of the future of bioethics.

13.1 Principlism

Although there are many ethicists whose work contributed to the establishment of principlism, William Frankena's work is recognized as particularly influential (Beauchamp and Childress, 1979; Clouser and Gert, 1990). For example, Frankena's use of "action-guides" is considered a precursor to the bioethical notion of ethical principle. Indeed, his essay, "The concept of morality," was frequently cited by consultants of the National Commission for the Protection of Human Subjects of Biomedicine and Behavioral Research (1978). In the essay, Frankena was concerned with the moral nature of action-guides, which he explicated in terms of "a 'material' *social* feature" as opposed to terms of "only certain 'formal' features" (1970, pp. 151–152). In other words, the morality of an action-guide depends upon "sociality" or the fellowship of persons as a necessary condition.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

Frankena's book *Ethics* profoundly influenced the development of principlism. In it, he defined ethical principles as "kinds of actions that are right or obligatory" (1963, p. 48). He distinguished five principles, including beneficence, justice, prudence or rational egoism, universalizability, and utility.[1] Of these principles, the framers of principlism singled out beneficence and justice (Beauchamp and Childress, 1979). According to Frankena, the principle of beneficence states that "we ought to do good and to prevent or avoid doing harm" (1973, p. 45). This principle served as a basis for the principle of utility.

Frankena defined the principle of justice in terms of "distributive justice," i.e. in terms of "the distribution of good and evil" (1973, p. 49). The essential notion for this principle is equality. "Treating people equally," according to Frankena, "does not mean treating them identically; justice is not so monotonous as all that. It means," he continued, "making the same relative contribution to the goodness of their lives (this is equal help or helping according to need) or asking the same relative sacrifice (this is asking in accordance with ability)" (1973, p. 51). His goal was to prevent certain segments of a population from being taken advantage of for the benefits of other segments.

Besides Frankena's work on ethical principles, the National Commission for the Protection of Human Subjects of Biomedicine and Behavioral Research, which met from 1974 to 1978, also championed ethical principles in terms of conducting deliberations about issues in bioethics.[2] The Commission was composed of a behavioral scientist, physicians, lawyers, among other professionals, including two ethicists, Albert Jonsen and Karen Lebacqz. On the supporting staff were also two philosophers: Stephen Toulmin, who served as special consultant and wrote the early drafts of the Commission's ethical findings, and Tom Beauchamp, who served as "staff philosopher" and was responsible for the final version of the report (Jonsen, 1998).

The Commission published its ethical findings as *The Belmont Report*, named after the Smithsonian Institution's Belmont Conference Center where the final report was written (Jonsen, 1998). Instead of identifying a set of rules for determining the moral nature of human research, the Commission focused on ethical principles. The reason was that moral "rules often are inadequate to cover complex situations; at times they come into conflict, and they are frequently difficult to interpret and apply. Broader ethical principles will provide a basis on which specific rules may be formulated, criticized and interpreted" (National Commission, 1978, p. 1). To that end, the Commission identified three "basic ethical principles" for determining the ethical nature of human research.[3]

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[1] In the first edition of *Ethics*, Frankena (1963) combined the principles of benevolence and utility.

[2] The Commission was in response, in part, to the atrocities of the Tuskegee study (Beauchamp, 2004a).

[3] The Commission defined these basic principles as "those general judgments that serve as a basic justification for the many particular ethical prescriptions and evaluations of human action" (National Commission, 1978, p. 4).

The first principle is “respect for persons.” This principle includes both the beliefs that test subjects should be considered autonomous agents and that those with compromised autonomy should be protected from abuse. “An autonomous person,” according to the Commission, “is an individual capable of deliberation about personal goals and of acting under the direction of such deliberation” (National Commission, 1978, p. 5). Respect for the person, then, is to respect a person’s autonomy and not to coerce a person to act contrary to his or her best interests.

The next principle is “beneficence,” which pertains to more than charity but reflects an obligation. For the Commission, “Two general rules have been formulated as complementary expressions of beneficent actions in this sense: (1) do no harm and (2) maximize possible benefits and minimize possible harms” (National Commission, 1978, p. 6). Thus, to determine the ethical nature of research, the investigator must assess the overall harm to the test subject versus the overall benefit. If the harm is greater than the benefit then the research is not justifiable.

The final principle is “justice,” which pertains to distribution of the benefits and burdens or risks of the research. “Who ought,” inquired the Commission, “to receive the benefits of research and bear its burdens?” (National Commission, 1978, p. 8). This principle is based on the notion of equality, i.e. “equals ought to be treated equally” (National Commission, 1978, p. 8). In other words, should one segment of the population bear the burden of risks from research while another segment reaps the benefits from it? Such an arrangement, according to the Commission, would certainly be unethical.

Besides the three principles, the Commission also listed and discussed three requirements for applying the three ethical principles to research. The first requirement is “informed consent.” This requirement is critical for applying the first ethical principle, respect for persons, in that only free and noncoerced agents are able to choose to participate in biomedical research. The Commission divided this requirement into three components. The first is information concerning the experimental protocol and its risks. The next component is comprehension on the part of the test subject of that information. The final component is voluntariness, i.e. “agreement to participate in research constitutes a valid consent only if voluntarily given” (National Commission, 1978, p. 14).

The second requirement is the “assessment of risks and benefits.” Researchers not only must assess systematically the nature and scope of the research’s benefits but also that of its risk. It is that ratio of benefit to risk that is required for applying the second ethical principle of beneficence. The final requirement is “selection of subjects,” which pertains to the application of the ethical principle of justice. This requirement is based in the notion of fairness, especially in terms of individuals and the larger community, in that the burden of research risk is to be distributed fairly and should not be shouldered by any particular segment of the population such as the institutionalized or racial minorities.

The impact of *The Belmont Report* was extensive, not only for the behavioral and medical research communities but also for the bioethics and clinical communities. “The enduring legacy of the report,” according to Beauchamp, “is that it has influenced almost every sphere of activity in bioethics; moral theory; and general standards of research, government regulatory activity, bioethics consultation, and even medical practice" (2004a, p. 3). One of its more important impacts was on two bioethicists, Beauchamp and Childress, who became the chief architects of principlism. These biomedical ethicists "were writing [their textbook *Principles of Biomedical Ethics*] at approximately the same time that they were involved with the Commission, and a mutual influence was inevitable" (Jonsen, 1998, p. 120). Beauchamp later admits that "these two projects—Principles and Belmont—had many points of intersecting interest and could be mutually beneficial" (2003a, p. 20).

In the Preface of the first edition to their textbook *Principles of Biomedical Ethics*, Beauchamp and Childress stated: "This book offers a systematic analysis of the moral principles that should apply to biomedicine" (1979, p. vii).[4] Their motivation was to provide a means to analyze the various and often opposing ethical positions toward biomedical problems, such as abortion and euthanasia. "Only by examining moral principals and determining how they apply to cases and how they conflict," according to Beauchamp and Childress, "can we bring some order and coherence to the discussion to these problems" (1979, p. vii). To that end, they introduced the principles of respect for autonomy, nonmaleficence, beneficence, and justice. The four principles were derived from the three principles of *The Belmont Report*. Essentially they factored out the principle of nonmaleficence from the Report's principle of beneficence.[5] Their approach to bioethics became known as the "Georgetown approach" and the four principles as the "Georgetown mantra" (Ainslie, 2004; Clouser and Gert, 1990).[6]

13.1.1 The Four Principles

Beauchamp and Childress (1979, 2001) locate the four principles within the following hierarchical framework: specific actions and ethical judgments → moral rules → ethical principles → ethical theories. In other words, ethical principles mediate between explicit ethical rules and particular ethical theories. As ethical rules are used to "justify" ethical judgments concerning the morality of specific actions, so ethical principles are used to justify and ground ethical rules. Beauchamp and Childress give the following example: "a physician who refuses to perform aminocentetesis [specific action]…may hold that it is morally wrong intentionally

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[4] Toulmin later wrote a critical assessment of the use of principles in biomedicine. He concluded that such use does not provide "particular ethical judgments a more solid foundation, but rather to square the collective ethical conclusions of the Commission as a whole with each individual commissioner's other *non*ethical commitments" (1981, p. 32). To offset the distorting and tyrannical influence of principles in ethical deliberation, he recommended an ethics of discretion that includes individual nuances and differences.

[5] As Beauchamp explained later: "Jim [Childress] thought, and argued vigorously, that the principle of beneficence should be distinguished from the principle of nonmaleficence" (1993, p. S9).

[6] Beauchamp and Childress locate their analysis of principles within the range of what they call "applied normative ethics, because biomedical ethics is the application of general moral action-guides to biomedicine" (1979, p. 9). Moreover, Beauchamp and Childress note that they were following Frankena in referring to principles and rules as "action-guides" (1979, p. 5).

to kill innocent human beings [ethical judgment]. When pressed, he may justify the proclaimed moral rule against killing innocent human beings by reference to a principle of the sanctity of human life" (1979, p. 5).

Beauchamp and Childress provide three criteria for determining whether an "action-guide" is a moral rule or an ethical principle.[7] The first is "overridingness" and pertains to what "a society accepts as *supreme*, *final*, or *overriding* in judgments about actions" (Beauchamp and Childress, 1979, pp. 15–16). The second criterion is "universalizability" and "requires that all relevantly similar cases be treated in a similar way" (Beauchamp and Childress, 1979, p. 16). The final criterion, "other-regardingness," refers to the content of the principle rather than to its form, and involves "the *welfare of others*" (Beauchamp and Childress, 1979, p. 17). Only by meeting these three criteria may a principle be considered a moral guide.

Although Beauchamp and Childress advocate a principlist approach to bioethics, they do not reject a role for ethical theories *per se* but position them as an overarching element in a hierarchical framework: "*theories* are bodies of principles and rules, more or less systematically related. They include second-order principles and rules about what to do when there are conflicts" (1979, p. 5). In other words, ethical theories permit moral agents to discriminate between ethical and unethical actions.

Beauchamp and Childress also discuss four tests used to examine the sufficiency of ethical theories. The first is an ethical theory's internal consistency and coherence, without which no theory could be counted on to yield the same results at various times by different people. The next test is an ethical theory's completeness or comprehensiveness, i.e. a theory must not exhibit any "gaps or holes." The third test is an ethical theory's simplicity, especially in terms of the number of rules and principles. The last test is an ethical theory's complexity: "a theory must be complex enough to account for the whole range of moral experience including our ordinary judgments" (Beauchamp and Childress, 1979, p. 13). Finally, Beauchamp and Childress concede that no one ethical theory satisfies all the tests, but "we do and should appeal to them in trying to determine which elements in a theory are acceptable" (1979, p. 12).

According to Beauchamp and Childress (1979), the two most prominent ethical theories in bioethics are the utilitarian and deontological theories. Beauchamp subscribes to the utilitarian theory, while Childress to the deontological theory (Jonsen, 1998, p. 332). Although utilitarian and deontological theories are foundationally opposed to each other, with respect to the function of some utility like the good or happiness, both theories do incorporate some types of rules. These rules may be rules of thumb, absolute rules, or rules based on *prima facie* duties. Whereas rules of thumb can be dispensed under certain conditions, absolute rules cannot be and admit to no exceptions. Rules based on *prima facie* duties, such as nonmaleficence, are binding unless it conflicts with a more binding duty.

Beauchamp and Childress give the following example to illustrate the use of rules. Whereas murder, as "unjustified killing," is wrong in most cases, there are times when it is permissible, such as mercy killing. "The point of the notion of *prima facie* duties, however, is that insofar as the act involves killing,"

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[7] Beauchamp and Childress use Frankena's notion of "action-guides" to refer to all the levels within their hierarchy, but especially to principles and rules (1979, p. 5).

Beauchamp and Childress conclude, “it is wrong [nonmaleficence]. Yet,” they acknowledge, “killing may be the only way to satisfy some other *prima facie* duties [e.g. beneficence]” (1979, p. 46). To adjudicate among the various uses of rules requires an understanding of the principles, e.g. nonmaleficence or beneficence, upon which the rules are based.

13.1.1.1 Principle of Autonomy

Beauchamp and Childress discuss the principle of autonomy in terms of liberty and self-determination. “Autonomy,” as they define it, “is a form of personal liberty of action where the individual determines his or her own course of action in accordance with a plan chosen by himself or herself” (Beauchamp and Childress, 1979, p. 56). Central to the concept of autonomy is the notion of the autonomous person. “The autonomous person,” according to Beauchamp and Childress, “is one who not only deliberates about and chooses such plans but who is capable of acting on the basis of such deliberations” (1979, p. 56).

Beauchamp and Childress’ notion of autonomy then is broad in conception and includes both a Kantian notion of the will and a Millian notion of action, i.e. Kant’s concern with autonomy of the will and Mill’s concern with autonomy of action. For Kant a moral person acts not out of desire but from autonomous, principled reason or will, while for Mill a moral person acts not out of conformity but from autonomous, free choice. Beauchamp and Childress acknowledge a similarity between the two approaches, in that an autonomous agent should not conform to a culture’s moral standard based solely on its authority.[8]

Besides the notion of autonomy and the autonomous person, Beauchamp and Childress also discuss the notion of respect for the autonomous person. “To respect autonomous agents,” claim Beauchamp and Childress, “is to recognize with due appreciation their own considered value judgments and outlooks even when it is believed that their judgments are mistaken” (1979, p. 58). For them, this notion follows from both Kant’s and Mill’s positions on autonomy.

The principle of autonomy depends on the Kantian notion of respect for the person as an ends and not a means: “in evaluating the self-regarding actions of others we ought to respect them as persons with the same right to their judgments as we have to our own” (Beauchamp and Childress, 1979, p. 59).[9] “It follows from the views

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[8] Beauchamp and Childress claim, however, that authority and autonomy are not antithetical: “Autonomy is perfectly compatible with authority, as long as the authority is autonomously accepted” (1979, p. 61).

[9] Interestingly, Beauchamp and Childress insist that “it is doubtful that the approaches taken by Mill and Kant lead to significantly different courses of action. Mill’s view leads to a moral demand of noninterference with the autonomy of others in society, while Kant’s leads to a moral demand that certain attitudes of respect be framed about the personhood and beliefs of others. In the end,” they conclude, “these two very different philosophers present views of autonomy which are both acceptable and in no major respects incompatible” (1979, p. 59).

advanced by Mill," they also argue, "that insofar as an autonomous agent's actions do not infringe on the autonomous actions of others, that person should be free to perform whatever action he wishes—even if it involves serious risk for the agent and even if others consider it to be foolish" (1979, p. 59). Thus, the principle of autonomy requires the liberty to act as freely as possible. Moreover, the principle is relevant only to those agents who are free to choose. For those who are not free to choose, it is incumbent upon society to protect them from harm.

Beauchamp and Childress also address the notion of informed consent, in terms of protecting a person's autonomy. One of the ways informed consent protects autonomy is by granting patients "the right to make decisions affecting their lives, even though the health professional may possess far more information and training" (Beauchamp and Childress, 1979, p. 63). They divide the notion of informed consent into an information element and a consent element.

The information element of informed consent pertains to both the disclosure to and the comprehension by the patient. The disclosure of information refers to "whatever a reasonable person would judge material to the decision-making process should be disclosed, and, in addition, any remaining information material to an individual patient should be offered through a process of asking a patient what else he or she wishes to know and providing truthful answers to any question asked" (Beauchamp and Childress, 1979, p. 73). Such "material" information would include, e.g. information concerning the surgical procedure, and alternative procedures and their respective risks. The comprehension of information refers to the ability of a patient to apprehend rationally and fully the medical information.

The consent element pertains to voluntary consent and to the competence to consent. Voluntary consent involves "the ability to choose one's own goals, and to be able to choose among several goals if a wide choice is offered, without being unduly influenced or coerced to any of the alternatives by other persons or institutions" (Beauchamp and Childress, 1979, pp. 80–81). Finally, competence to consent is concerned with the rational capacity to assent: "a person is competent if and only is that person can make decisions based on rational reasons" (Beauchamp and Childress, 1979, p. 69).

13.1.1.2 Principle of Nonmaleficence

According to Beauchamp and Childress, nonmaleficence is generally associated with the principle of beneficence.[10] For example, they cite Frankena's formulation of the beneficence principle in which doing no harm trumps doing good. However, they

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[10] Beauchamp and Childress recognize that proponents of rule deontological and rule utilitarian theories also acknowledge a separate principle of nonmaleficence.

demarcate nonmaleficence from beneficence as a separate principle for several reasons. The first is that “to confuse them is to obscure distinctions that we make in ordinary moral discourse” (Beauchamp and Childress, 1979, p. 98). In addition, at times the duty of nonmaleficence takes precedence over the duty of beneficence. They give the example of a duty not to shove into deep water a person who cannot swim, from a duty to save a person who accidentally strays into such danger. Nonmaleficence is also distinguished from nonmalevolence; in that the former is concerned with action, while the latter with motive or virtue.

According to Beauchamp and Childress, the terms “harm” and “injury”—used to explicate the notion of nonmaleficence—are ambiguous. However, they limit the notion to “physical harms, including pain and suffering, disability, and death, without denying the importance of mental harms and other injuries. In particular,” claim Beauchamp and Childress, “we will emphasize intending, causing, permitting, and imposing the risk of death, although we will also refer to other harms along the way” (1979, p. 99).

The duty of nonmaleficence, according to Beauchamp and Childress, is to refrain from harm, whether intending harm or imposing the risk of harm. Intending harm is allowed only under unique and well defined conditions, while imposing the risk of harm is allowed as long as the aim is “sufficiently important” and the physician exercises “due care.” “For health care professional,” argue Beauchamp and Childress, “the legal and moral standards of due care include knowledge, skills, and diligence” (1979, p. 100). Physicians then are held to this standard of due care *vis-à-vis* nonmaleficence, when practicing medicine, and to fail to practice accordingly results in negligence both morally and legally.

Referring to Jonsen’s typology for explicating the notion of nonmaleficence, Beauchamp and Childress discuss the difference between risk-benefit analysis and detriment-benefit analysis. The former analysis is important for the principle of beneficence, while the latter for the principle of nonmaleficence. Detriment-benefit analysis refers to “the detriments that occur at the time of the procedure or benefit” (Beauchamp and Childress, 1979, p. 101). They give an example of limb amputation in which a patient is not only interested in the procedure in terms of its benefit but also in terms of its harm or detriment. Lastly, the principle of nonmaleficence is defined as the prohibition of harm to a person who places his or her trust in the healthcare provider.

Finally, Beauchamp and Childress discuss the principle of double effect. According to this principle, “a harmful effect, e.g., death, does not always fall under moral prohibitions, e.g., murder, suicide, or abortion. The harmful effect is seen as an indirect or merely foreseen effect, not the direct and intended effect of the action” (Beauchamp and Childress, 1979, p. 102). They provide the Roman Catholic example of permissible abortion, e.g. if a pregnant woman also has a cancerous uterus. Although removal of the cancerous uterus is necessary for the woman’s survival, it is permitted even though the fetus is destroyed because destruction of the fetus is not intended but rather the removal of the uterus. In other words, the removal of the uterus is the primary intention of the medical procedure not an abortion to destroy the fetus. The latter act, although foreseeable, is a secondary intention.

Beauchamp and Childress acknowledge that most bioethicists reject the principle of double effect on several grounds. For example, utilitarians claim that it is not relevant since the outcome of either removal of a cancerous uterus or a craniotomy is the same—destruction of the fetus. Proponents of the principle respond by noting the distinction between the ratio of good to evil effects. Unfortunately, it is at times hard to demarcate between these proponents and utilitarians.

13.1.1.3 Principle of Beneficence

Besides respecting a person's autonomy and not harming a person, morality also involves benefiting the person, especially if that person stands in harm's way. Whereas nonmaleficence involves not inflicting harm or injury onto the patient, the notion of beneficence involves "prevention of harm, removal of harmful conditions, and positive benefits" (Beauchamp and Childress, 1979, p. 135). In other words, beneficence is more than simple charity; rather, it is a duty not only to remove harm or injury or to avoid harming or injuring a person but also to affect positive benefit for that person. For the physician especially, the notion of beneficence involves treating a patient's disease or illness in order to promote health or wellbeing. Beauchamp and Childress divide the principle of beneficence into two principles: "the first principle requires the *provision* of benefits, and the second requires a *balancing* of benefits and harms" (1979, p. 136).

The first principle pertains to positive beneficence, in which a person has the moral duty to benefit another. There is a problem with the principle: it is supererogatory rather then obligatory. In other words, positively benefiting another is laudable but not necessarily a duty. There are a set of conditions that must be fulfilled before positively benefiting another becomes a duty, i.e. "X has a duty of beneficence toward Y only if each of the following conditions is satisfied: (1) Y is at risk of significant loss or damage, (2) X's actions is directly relevant to the prevention of this loss or damage, (3) X's actions would probably prevent it, and (4) the benefit that Y will gain outweighs any harms that X is likely to suffer and does not present more than minimal risk to X" (Beauchamp and Childress, 1979, p. 140). These conditions are particularly satisfied in medicine, in which a physician has a moral duty to benefit positively a patient: "Human needs, actual or perceived, usually form the basis of this beneficial relationship" (Beauchamp and Childress, 1979, p. 142).

The second principle is utility. According to Beauchamp and Childress, this principle is based on "a moral duty to weigh and balance possible benefits against possible harms in order to maximize benefits and to minimize risks of harms" (1979, p. 143). The moral life is seldom a straightforward process in which one's actions are simply beneficial and never harmful; there is always some risk of harm in one's actions, especially for the physician's. This principle is one among others, however, and is not to be given pride of place. To illustrate the principle, they provide an example of a patient whose requirement for treatment may outstrip the available resources and may consequently be denied. In this example, the ethical or moral issue is the conflict over an individual’s rights and allocation of societal resources: “individual’s needs must at some point be balanced against society’s abilities to provide” (Beauchamp and Childress, 1979, p. 145). The way to adjudicate these ethical issues is in terms of a cost/benefit analysis.

Beauchamp and Childress begin the discussion of the nature of cost/benefit analysis, by defining the various notions in terms of human health and welfare. Cost is “anything of negative value that detracts from human health and welfare,” whereas benefit is “something of positive value that promotes health and welfare” (Beauchamp and Childress, 1979, p. 146). They also include in the analysis the notion of risk, which “refers to a possible future harm” (Beauchamp and Childress, 1979, p. 146). The notion of harm is defined as “pain and diminished psychological and physical ability” (Beauchamp and Childress, 1979, p. 147). The notion of risk includes probabilistic elements that are absent from assessments of costs, so that risk can be either high or low. The costs and risks are generally measured in financial terms, to provide objective data for decision making. However, such objectivity can be arbitrary at times, given the problems of accurately assessing costs, risks, and benefits, especially when psychological factors must be factored into computations.

13.1.1.4 Principle of Justice

According to Beauchamp and Childress, a sense or an intuition of what is just is a powerful motivation for action and that “we think there are *valid principles* of justice which determine how social burdens and benefits ought to be allocated” (1979, p. 168). To that end they discuss various concepts of justice, such as fairness. However, these concepts are too permissive and they rely upon a less permissive concept of distributive justice. This concept of justice involves the allocation of benefits and risks among society’s members, e.g. some members bearing the burden or risk as test subjects of biomedical research and others enjoying the benefit of that research.

The type of distributive justice Beauchamp and Childress are interested in is comparative, which depends upon an individual’s claims to what is just, rather than noncomparative, which is independent of those claims. The main issue for distributive justice is the means by which to allocate the benefits and burdens or risks, given the scarcity of resources. For example, who is to serve as a test subject for biomedical research given a limited pool of subjects willing to bear the risk of such research?

To answer the above question, Beauchamp and Childress invoke the formal and material components of justice. The formal component is based on the Aristotelian notion of “equals ought to be treated equally and unequals unequally” (Beauchamp and Childress, 1979, p. 171). “It is *formal*,” according to Beauchamp and Childress, “because it states no particular respects in which equals ought to be treated the same. It only says,” they declare, “that no matter what respects are under consideration, if persons are equal in those respects, then they must be treated equally” (1979, p. 171).

But the question arises as how best to determine who is equal and who is unequal. In other words, what are the relevant criteria or conditions for allocating benefits and risks? Beauchamp and Childress utilize the material component of justice to answer that question. According to this component, the relevant conditions refer to the particular property of an individual. For example, the relevant material condition may be individual need or merit.[11] They narrow the focus of need to that of "fundamental" need. "To say that someone has a 'fundamental need' for something," claim Beauchamp and Childress, "is to say that the person will be harmed or detrimentally affected in a fundamental way if that thing is not obtained" (1979, p. 174).

Another question arises with respect to the relevant properties of an individual: how are these properties established or justified? Morally relevant conditions or properties are often established or fixed in terms of tradition or moral principles. "However," note Beauchamp and Childress, "in controversial contexts it is morally appropriate either to institute a policy which establishes relevant respects where none has previously been firmly established or to develop a new policy which revises standard 'relevant' respects" (1979, p. 176).

To illustrate the problem associated with choosing morally relevant properties or conditions, Beauchamp and Childress provide a case in which a woman needs a kidney transplant to survive. Both her fourteen year old daughter and thirty-five year-old mentally challenged brother are matches. Whose kidney is to be used? The question cannot be answered from traditional sources, such as moral principles, but from moral deliberation and decision on the relevant conditions of the situation and properties of the participants. "This case shows," conclude Beauchamp and Childress, "that when rather concrete policies must be formulated, abstract principles of justice provide only rough general guidelines, and further moral argument is needed to fix the specific relevant properties on the basis of which actual choice can be made" (1979, p. 177).

The principle of justice also includes the notion of "fair opportunity," in terms of relevant aspects such as gender or mental condition. These aspects are the result of natural consequences and not personal choices. What is the relevancy of these aspects in terms of allocation of risks and benefits? The notion of fair opportunity, claim Beauchamp and Childress, "says that none should be granted benefits on the basis of their 'advantageous' properties, since they are not responsible for such properties; and it also says that none should be *denied* benefits on the basis of their 'disadvantageous' properties, since they too are not responsible for such properties" (1979, p. 183). In other words, these properties should not be the basis for determining the allocation of benefits and risks because there is no fair opportunity to obtain them.

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[11] "*Theories* of distributive justice," note Beauchamp and Childress, "are commonly developed by systematically elaborating one or more of the material principles of distributive justice, perhaps in conjunction with other moral principles" (1979, p. 173). For example, Marxist theories focus on needs as opposed to merit or contribution.

Although the notion of fair opportunity states that persons should receive their fair share of the benefits and be responsible for the risks of generating those benefits, the question arises as to what constitutes a “fair share.” The question leads to issues of macroallocation and microallocation, which entail not only ethical considerations but also economic considerations. Macroallocation issues involve the role of the government in the distribution of healthcare resources and the determination of what those resources should be *vis-à-vis* a society’s healthcare needs, while microallocation issues involve the role of individual hospitals and clinics *vis-à-vis* an individual patient’s healthcare needs.

13.1.2 Principlism’s Impact

Principlism has been the principal approach to bioethics for almost three decades, with Beauchamp and Childress’ book going through five editions. As critics note, “Beauchamp and Childress’ *Principles of Bioethics* [sic] (in its various editions)… [is] the field’s most influential book espousing principlism” (Green et al., 1993, p. 477). One of the chief advocates of principlism is the general medical practitioner, Raanan Gillon. Although he subscribes to Beauchamp and Childress’ list of four principles, he modifies them, especially with respect to what he calls the “scope of application,” to suite the issues that arise in his own medical practice.

The crowning achievement of Gillon’s advocacy, besides his *Philosophical Medical Ethics* (Gillon, 1986), was *Principles of Health Care Ethics* (Gillon, 1994), a collection of articles by around one hundred prominent physicians and bioethicists. Topics ranged from the theoretical to the practical, such as abortion and death and dying issues. To his credit, Gillon invited not only advocates of principlism but also its critics, such as Danner Clouser and Bernard Gert, in order to expound not only on the application of principlism but also on its limits. Gillon acknowledged that principlism is not an algorithm for resolving ethical dilemmas: “What the principles plus scope approach *can* provide is a common set of moral commitments, a common moral language, and a common set of moral issues to be considered in particular cases, before coming to your own answer, using your preferred moral theory or other approach to choosing between these principles when they conflict” (1994, p. xxii). Not all biomedical ethicists were as optimistic or enthusiastic about principlism as Gillon.

Although principlism has had a significant impact on bioethics, it also had its critics. In an early review of Beauchamp and Childress’ book, for example, Arthur Caplan argued that “the most serious flaw of the book is that it fails to give any context for ethics itself. Health professionals are likely,” he continued, “to want to know how moral considerations are to be weighed against other types of values (such as economic, political, social or cultural)” (1980, p. 54). Principlism enjoyed unabated success for almost a decade, after its introduction. “The Beauchamp and Childress approach,” claimed Ezekiel Emanuel, “was very influential; among ethicists, invoking the four principles to address medical ethical dilemmas became the standard approach heard on hospital rounds, read in prestigious medical journals, and found in policy reports" (1995, p. 37).

Sustained and damaging criticism, however, was on the horizon. For example, in December 1990 and then in October 1991 the Park Ridge Center for the Study of Health, Faith, and Ethics held conferences to explore principlism's vitality. "A fairly widespread perception exists, both within and without the bioethics community" opined the editors of the published papers from the conferences, "that the prevailing U.S. approach to the ethical problems raised by modern medicine is ailing. Principlism is the patient" (DuBose et al., 1994, p. 1). As James Wind pointed out in an Afterword to the published papers, the main concern, as he saw it, of the conferees was that "principlism reduces humans (both givers and receivers of care) to much less than they really are and that those reductions are unhealthy" (1994, p. 364).

However, the most notable and well recognized critiques were two articles that appeared in a 1990 issue of the *Journal of Medicine and Philosophy*. The first was by the theologian Ronald Green from Dartmouth College. Green bemoaned what he described as the "troubled" nature of methodology in bioethics *vis-à-vis* principlism. According to him, such bioethics is "applied ethics," with little attendant theoretical analysis. "It characteristically forebears from sustained theoretical inquiry into the nature and foundations of the process of moral reasoning and justification…Instead," lamented Green, "it moves directly into to the identification of a set of moral 'principles' believed present in and justified by almost any major theoretical account" (1990, p. 187). He found this avoidance of theoretical analysis of bioethical foundations disconcerting, especially when moral principles result in conflicting ethical stances and positions. Green's chief criticism of principlism was "that moral analysis cannot be confined to a process of identifying and applying moral principles, however, sophisticated this process may be, when the essential work of deriving the basis, meaning, and scope of these principles is left undone" (1990, p. 190).

"Throughout the land, arising from the throngs of converts to bioethics awareness," observed Clouser and Gert, "there can be heard a mantra…'beneficence…autonomy…justice'…It is this ritual incantation in the face of biomedical dilemmas," they claim, "that beckons our inquiry" (1990, p. 219). In their inquiry, Clouser and Gert came to the conclusion that the four principles—or principlism, a neologism they coined—do not offer the systematic or theoretical guidance needed to resolve bioethical quandaries. "Using principles in effect as surrogates for theories seems to us," argued Clouser and Gert, "to be an unwitting effort to cling to four main types of ethical theory: beneficence incorporates Mill; autonomy, Kant; justice, Rawls; and nonmaleficence, Gert. Presenting the matter as many principles," they continued, "suggests that the principles have been integrated into one unified theory, whereas the exact opposite is true" (1990, p. 223). According to Clouser and Gert, principlism represents a failure to combine specifically utilitarian and deontological ethical theories and consequently "leads to *neglect* of (1) the theories from which the principles supposedly derived, (2) the individual rules and ideals that apply to the particular case, (3) the procedure that should be used in applying the rule to the particular case, and (4) the statement of the particular duties of the profession" (1990, p. 235).

In defense of principlism's method, Andrew Lustig (1992) criticized both Green's and Clouser and Gert's critiques.[12] Lustig addressed three major criticisms of these critiques. The first was Green's criticism that principlism as applied ethics is the simple application of principles to moral dilemmas without considering the contexts in which they must be applied. Lustig countered that Green's criticism is unfounded in that "Beauchamp and Childress stress the need, in particular cases, to contextualize the application of rules and principles" (1992, p. 489). Moreover, the application of principles results in a mutual enrichment of principles and theories.[13]

Next, Lustig examined Clouser and Gert's criticism that Beauchamp and Childress fail to account for the four principles from a theoretical perspective, resulting in "confusion" as to their practical application. Lustig retorted that although Beauchamp and Childress' principles do not operate in terms of classical ethical theories, yet those principles are sufficient for adjudicating complex moral dilemmas. "To my mind," contested Lustig, "Beauchamp and Childress reveal sophistication and subtlety in considering the implications of principles for a plethora of clinical cases in therapy and research" (1992, pp. 494–495).

Finally, Lustig examined Green's charge that Beauchamp and Childress avoid the theoretical issues of bioethics or what Lustig called "theoretical agnosticism." Lustig invoked Michael Walzer's contention that ethical deliberation is possible without theoretical foundations. "Very often, in this author's experience," opined Lustig, "the judgments of ethicists, administrators, and clinicians, despite their different fundamental commitments—and often their noticeably different practical agenda—do converge at the level of principle. Indeed," he concluded, "arguments about what to do often end there" (1992, p. 498).

In turn, Green, Gert, and Clouser responded to Lustig's criticism of their critique of principlism. In their response, they claimed that Lustig "engages none of our important points and he misunderstands the peripheral points he chooses to engage" (1993, p. 478). They first took up the critique of Clouser and Gert's criticism, which they identified as an inability of principles to guide moral deliberation since they are generally vacuous. "Our very point," according to Green, Gert, and Clouser, "was that principlism had no systematic way of dealing with the conflicts between principles" (1993, p. 479). A point that they believed Lustig's criticism corroborated.

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[12] In the same issue of the journal in which Lustig published his defense of principlism, David DeGrazia (1992) also published a defense in which he introduced a modified version of principlism he called "specified principlism." Based on Henry Richardson's notion of specification, DeGrazia delineated the characteristics of specified principlism as: "(1) It has one or more (probably more) general principles 'at the top'; (2) It employs casuistry but is by no means reducible to it; (3) It allows the drawing and explication of relationships between norms of different levels' relationships usually irreducible to 'derivation' or 'entailment'; and (4) It allows for discursive justification throughout the system" (1992, p. 523). He then concluded that specified principlism is an adequate theory for guiding bioethical deliberation.

[13] Lustig acknowledged that there is a problem with Beauchamp and Childress' reliance on W.D. Ross' notion of intuitionism in which moral principles "are somehow 'obvious' at the moment of moral insight and decision" (1992, p. 491). He believed that such reliance makes the nature of principles too "rarified" and not as practical as espoused in their book.

Next, Green and colleagues addressed Lustig's critique of Green's criticism, which they claimed was concerned with ethical methodology in terms of its justification. They disagreed with Lustig's claim that the convergence of moral judgment concerning specific case studies found in Beauchamp and Childress is not the result of deliberating over principles; rather, they argued it is due to a common moral reasoning. Green, Gert, and Clouser concluded that "we do not object to Beauchamp and Childress's detailed discussions of concrete cases, our objection is solely to their theoretical explanation and justification of their moral judgments" (1993, p. 481). They held tenaciously to the view that there is a theoretical basis to bioethical deliberation, which they defended in the remaining part if their article.

In the fourth edition of *Principles of Biomedical Ethics* Beauchamp and Childress (1994) addressed their critics, particularly Clouser and Gert. They rejected a fundamental assumption of their critics that there is a single ethical theory from which consensus concerning moral action can be derived. Rather, they remained skeptical of such a methodology. Beauchamp and Childress defended principlism against what they perceived as three criticisms. The first was that ethical principles are nothing more than titles for values that offer little in terms of guiding or resolving moral conflict. They claimed that further specification and content is required for the principles to be used effectively. "Until the principles are interpreted and analyzed…and specified and connected to other norms…it is unreasonable to expect much more than a classification scheme," concluded Beauchamp and Childress, "that organizes the normative content" (1994, p. 106).

Beauchamp and Childress considered a second criticism—principlism does not provide an overarching theory—as "irrelevant" and held that such a theory is undiscoverable. Finally, they countered the criticism that principlism is unable to resolve conflict among the principles by claiming that there is no possible algorithm for adjudicating moral dilemmas: the moral life is simply too messy. Beauchamp and Childress concluded that although their critics "rely on an ideal of systematic unity, we see disunity, conflict, and moral ambiguity as pervasive aspects of the moral life" (1994, p. 107). According to them, principlism is a realistic reflection of moral deliberation and the dilemmas associated with a moral life.

The debate over principlism was to heat up over the next few years (Beauchamp, 1995; Emanuel, 1995). Richard Davis (1995) provided an astute assessment of it. His main thesis was that the participants in the debate were talking past one another, because they assumed different notions of moral theory based on their specific epistemological commitments. For example, Davis reconstructed Clouser and Gert's criticism in terms of the clarity and relatedness of the four principles. The four principles do not provide the necessary guidance for moral choice under well defined conditions; rather, each principle "raises a host of loosely related, sometimes conflicting, moral considerations" (Davis, 1995, p. 89). Hence, principlism fails the clarity requirement for a well formed ethical theory. In terms of relatedness of the four principles, principlism also fails to exhibit this necessary feature of a well formed theory. According to Davis' reconstruction of Clouser and Gert's criticism, the four principles are not sufficiently related systematically to guide ethical decision. Thus, principlism fails to substitute as an ethical theory since it does not exhibit the required features of one.

Davis then reconstructed the defense of principlism, by its proponents. According to him, there were two avenues open to them. The first was to deny that the principles are not systematically related and to show how they are related. Davis claimed that this was Lustig's approach. Lustig, opined Davis, meets neither the clarity nor the relatedness requirements for an ethical theory, with Lustig's emphasis on intuitive balancing or weighing of principles or with the enumeration of non-intuitive conditions. Davis believed that even the non-intuitive "does tend to make more precise the grounds for adjudicating *between* 'principles', it does not serve to tie together the multifarious elements contained *within* a given 'principle', thus settling a principle's precise demands" (1995, p. 95).

The second avenue was to argue that the four principles do not need to be systematically related to each other. According to Davis, this was Beauchamp and Childress' approach, especially in terms of the principles' coherence.[14] For them, this coherence was theory enough. The problem with this position was that it is "too underdeveloped to be of much help. What is needed," argued Davis, "is a fuller account of what coherence is. What are the necessary and sufficient conditions for coherence?" (1995, p. 100). Overall, Davis was unable to identify any decisive reason to choose between Clouser and Gert's theory and Beauchamp and Childress' theory. "It seems to me, therefore," lamented Davis, "that both sides in the principlism debate have (to some extent) defined their terms in such a way that their conclusions are virtually guaranteed" (1995, p. 103). Progress in the debate, he concluded, would not occur until the participants in it attend to their epistemological differences, especially in terms of how best to justify their moral theory.

Michael Quante and Andreas Vieth also acknowledged that "the epistemology of principlism remains until now [with the publication of the fourth edition of *Principles*] largely underdetermined" (2002, p. 625). Although Beauchamp and Childress deleted language about intuitions to justify principlism in the fourth edition of *Principles*—rather they justified it in terms of coherentism—Quante and Vieth argued that the justification of principlism requires a version of weak intuitionism. Utilizing a distinction made by Robert Audi between qualified and unqualified intuition, they asserted that "one can establish, for the concept of intuition relevant for Beauchamp and Childress, that value-judgments, which as self-evident knowledge form the starting point of ethical reflection, (a) involve direct knowledge that is not brought about through the discursive activity of reason, but that (b) nevertheless is not without an inner reflexive structure" (Quante and Vieth, 2002, p. 625).

Quante and Vieth identified several passages within the fourth and fifth editions of *Principles* to justify their assigning qualified intuition to Beauchamp and Childress' defense of principlism. First, they pointed to Beauchamp and Childress' use of "considered judgments" to justify moral beliefs. Next, they claimed that the

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[14] Davis described Beauchamp and Childress' coherentist approach as "a unique blend of Lustigian intuitive balancing and DeGrazian specification" (1995, p. 98). He also thought DeGrazia's specified principlism was a more defensible position.

combination of perceived *prima facie* duties with mental activities supports a "direct apprehension" of moral value. In addition, specification of principles requires "a special technique of reflection" by which they are enriched. Quante and Vieth concluded that these passages "speak in favor of interpreting principlism as a qualified intuitionism because they show that a person of considerable experience has a responsiveness to situations…which is theoretically structured as a whole" (2002, p. 627). In other words, qualified intuition does not depend on mere ethical opinion but rather on an insightful judgment formed through experience.

13.1.3 Alternatives to Principlism

In a review of the fourth edition of *Principles of Biomedical Ethics*, Ezekiel Emanuel claimed that "Beauchamp and Childress have rejected the old approach [of the first three editions]. This marks the beginning of the end of 'principlism' " (1995, p. 37). Emanuel was referring to Beauchamp and Childress' common morality theory, which he maintained is radically different from their earlier notion of principlism. Besides Beauchamp and Childress' common morality, others proposed moral theories and approaches, including deductivism, casuistry, and narrative ethics. These alternatives or competitors of principlism are examined in the remainder of this section. Early on, however, several biomedical ethicists, including Robert Veatch, Tristram Engelhardt, and Pellegrino and Thomasma, attempted to provide a theoretical foundation for bioethics in contrast to principlism.

In *A Theory of Medical Ethics*, Veatch argued that the Hippocratic tradition is fatally flawed and is not a valid source for modern bioethics, especially a bioethics founded upon ethical principles. These principles often conflict with one another. Rather, Veatch proposed an ethic of relationship in terms of a "contract or covenant" theory. "The contractual or covenantal foundation of medical ethics," according to Veatch, "implies real flesh-and-blood relationships in a moral community. It, rather than mere professional consensus," he continued, "is fundamental to knowing what is required in a medical ethic" (1981, p. 8).

Veatch formulated a "triple contract" for bioethics. The first contract involves the basic components that make up an ethical system, whether discovered or invented. The next contract, once the ethical principles are identified, is between a society and a profession, in which the moral or ethical duties of professionals towards society's members are laid out. Finally, the third contract pertains between specific members of the profession and society. The guiding principles for these contracts include the nonconsequentialist principles of contract keeping, autonomy, honesty, avoiding killing, and justice in contrast to the consequentialist principles of beneficence and nonmaleficence. Based on these principles Veatch proposed a draft for a medical ethical covenant (1981, pp. 327–330).

In *The Foundations of Bioethics*, Engelhardt attempted to provide a foundation for bioethics in order to resolve the ethical conflicts that plague a secular, pluralistic society. "I have endeavored," claimed Engelhardt, "to find grounds for establishing by reason a particular view of the good life and securing by general rational arguments the authority for its establishment. To my dismay and sorrow," he lamented, "such have not been available" (1986b, p. viii). His goal was not to defend secular ethics *per se* but to demonstrate its "inevitability."

Engelhardt attempted to base bioethics not on principles such as autonomy or beneficence but on respect for freedom and mutual respect as the minimum condition for achieving a secular consensus concerning ethical discord or conflict. "By appealing to the minimum notion of ethics as a means for peaceably negotiating moral disputes," argued Engelhardt, "one can disclose as a necessary condition for ethics the requirement to respect the freedom of the participants in a moral controversy" (1986b, p. 42). Moral authority is sanctioned by a pluralistic community much like policy formation, when a mutual agreement is reached by the concerned parties. For Engelhardt, this requires a procedural set of moral rules that are contractual in nature.[15]

In *A Philosophical Basis of Medical Practice* Pellegrino and Thomasma (1981a) proposed a medical ethics based on the body's ontology, especially in terms of the concrete values of medical care. To that end, they identified three fundamental values from which they derived three ethical axioms for guiding action. The first value is the health of the person, from which is derived the ethical axiom of "do no harm" to the patient's body: "the axiom to do no harm has a base in the real human condition as well as in the nature of medicine itself. To violate it," cautioned Pellegrino and Thomasma, "is not only to violate the nature of medicine but one of the very conditions of its possibility" (1981a, p. 184). The next value is an individual's intrinsic worth, from which is derived the ethical axiom of the patient's bodily uniqueness and vulnerability.

The final value is the commonality of people as a representative of persons in terms of their shared bodily features. From this value is derived the axiom of treating patients equitably, in terms of the common good. Based on these axioms Pellegrino and Thomasma proposed a reformation of medical morality, in terms both of the physician, including technical competence, insuring the patient's moral agency, and respecting the individuality of the medical encounter, and of the patient, including trusting the physician's competence, respecting the physician's moral agency, telling the truth about the disease experience, and being reasonable about expectations concerning a cure.

In *For the Patient's Good*, a sequel to *Philosophical Basis*, Pellegrino and Thomasma (1988) attempted to ground bioethics, and its emphasis on principlism,

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[15] In the second edition of *Foundations*, Engelhardt (1996) continued to pursue a "secular" morality for bioethics to which all could subscribe, but a secularism seen through the eyes of a "born-again Texan Orthodox Catholic" (1996, p. xi). The full impact of Engelhardt's conversion was not felt until the publication of *The Foundations of Christian Bioethics* (2000), in which he not only rejected a secular basis for bioethics but also one based on a rational theology. For Engelhardt, the true basis of Christian bioethics is a theology not "of discursive or scholastic reasoning, but of changing the knower and of being granted illumination by God" (2000, p. xvi). Critics have been less than enthusiastic (Spicker, 2002; Welie, 2001).

on beneficence—as opposed to patient autonomy—by extending their ontological analysis to include "beneficence-in-trust," which involves the physician's incorporation of the patient's values in the medical encounter as part of a fiduciary contract. Again, the approach was concerned with what Pellegrino and Thomasma called the "lived body."

The issue was whether autonomy should be the primary goal of medical ethics. "Is it not a violation of the good of the body," queried Pellegrino and Thomasma, "to mistreat it by excess (tobacco, alcohol, drugs, food, sloth) or to fail to repair it when an effective means of repair is available?" (1988, p. 44). Such a question pointed to the weakness of autonomy and the need for beneficence to balance it. To resolve this weakness and to provide balance, they combined both beneficence and autonomy into a "single" principle—beneficence-in-trust. "By beneficence-in-trust," explained Pellegrino and Thomasma, "we mean that physicians and patients hold 'in trust' (Latin, *fiducia*) the goal of acting in the best interests of one another in the relationship" (1988, pp. 54–55).

The above attempts to provide a basic moral theory for bioethics failed to capture the allegiance of the nascent discipline, because "Veatch's triple contract was too hypothetical, Engelhardt's 'logic of pluralism' too morally thin, Pellegrino and Thomasma's beneficence-in-trust too ontological" (Jonsen, 1998, p. 331). In the remainder of this section, deductivism, common morality, casuistry, and narrative ethics are examined as alternatives to traditional principlism.

13.1.3.1 Dartmouth Deductivism/Descriptivism

In defense of principlism, Lustig also criticized what he called "Dartmouth deductivism." Specifically, he criticized Gert's version of it; but, the label eventually branded other Dartmouth associates, including Clouser and Green. Deductivism, as an ethical theory, however, is not simply limited to Dartmouth but rather has a long tradition. The essence of deductivism is that ethical principles are deduced from a well formed theory. "What makes an ethical theory deductivist," according to DeGrazia, "is its having a theoretical structure sufficiently well defined that all justified moral judgments (or all within some specified domain)—given knowledge of relevant facts—purport to be derivable from the structure, in principle" (1992, p. 512).

An important feature of deductivism is the rational necessity—rather than the intuition—of its moral or ethical rules and tenets, i.e. its "tenets simply *must* hold for any rational being" (Levi, 1996, p. 11). In the case of competing moral rules or tenets, then, there must be a rational means for choosing among them: "ultimately there must be one or more general norms that serve as the final justification for all more specific moral judgments" (DeGrazia, 1992, p. 513).

Gert proposed a justification for moral rules in his original 1966 edition of *Morality*, which went through several editions until a 1988 revised version to which a subtitle, *A New Justification of the Moral Rules*, was added. For Gert, morality is at its core a public affair. "*Morality*," as he defined it, "*is a public system applying to all rational persons governing behavior which affects others and which has the* *minimization of evil as its end, and which includes what are commonly known as the moral rules as its core*" (1988, p. 6).

Gert's moral system is composed of several elements. The first is the ten moral rules. Specifically, they include such rules as "Don't kill" and "Don't cause pain," along with "Don't deceive" and "Keep your promise" (Gert, 1988, p. 157). The rules are concerned not only with the avoidance of harm, but also with other dimensions of the moral life. The next element is the moral attitude, which is concerned with the justification of the moral rules. Each of these rules is followed by any reasonable person, unless an impartial person can justify breaking it publicly. Moreover, the goal of morality is not to maximize the good or pleasure but to minimize evil.

Besides rules, Gert's moral system also involves moral ideals and utilitarian ideals, which prevent evil and promote good, respectively. The final element is the morally relevant features, especially for any infraction of the moral system. In conclusion, Gert lamented that even these moral rules could not be reduced to a single moral injunction, but even more lamentable was the fact that "the most familiar moral injunctions have to be modified or interpreted before they provide an adequate summary of the moral guide to life" (1988, p. 302). However, he did consider his moral rules a precise description of morality.

Lustig's critique centered on the deductive nature of Gert's justification of moral rules in moral reasoning. "It seems at least as plausible," Lustig charged, "that most persons, when thoughtful and self-conscious in their moral deliberations on perplexing matters, will set their appeal to moral rules within a larger context of justification—not simply an 'obvious' rule to be applied impartially and rationally, as Gert's deductive account would suggest, but a rule or rules to be further *interpreted* within the broader justificatory context that principles afford" (1992, p. 502). In other words, Gert's moral rules are too simplistic.

According to Lustig, the moral life is too complex and fluid to be deduced from a set of moral rules. Moreover, he felt that Gert's moral theory does not meet the criteria for such a theory as offered by Clouser and Gert (1990), which includes explaining moral agreements and disagreements and how moral features are related to each other. Finally, Lustig argued that Gert's public moral system is ambiguous on what constitutes morality. "Bereft of any more context of moral appeal beyond the rules themselves," charged Lustig, "the evaluation of what is to count as an 'adequate' reason seems to remain at the level of arbitrary assertion rather than argument" (1992, p. 505). He concluded with a challenge to Gert and other Dartmouth deductivists to produce a precise moral system.

In response to Lustig, Gert and colleagues defended their position. According to them, "the 'Dartmouth' part of his label 'Dartmouth Deductivism' is on target, but the 'Deductivism' could hardly be more inaccurate. In fact," they continued, "'deductivism' suggests several theoretical tendencies we emphatically reject" (Green et al., 1993, p. 481). These tendencies include a "quasi-geometrical" reasoning process from moral principles that is "non-contextual" and that leads to consensus. They claimed that their moral system involves a method of reasoning from moral premises, which incorporates contextual particularities and which leaves room for disagreement or debate over conclusions.

Based on Gert's notion of morality, Gert and colleagues identified three features of morality. The first was that morality is systematic, in that rules can be understood only in terms of their relationship to other rules. The next feature was the public nature of morality, while the final feature was that morality applies to all rational, impartial persons. Although they claimed that these features are found in many ethical theories, they insisted that what demarcates their theory from other theories "is the conviction that taken together and properly applied to instances of moral decision, these features both explain how thoughtful people actually make moral decisions and form a sound basis for making decisions about new and perplexing questions" (Green et al., 1993, pp. 481–482). Based on this descriptive nature of their moral theory, they referred to themselves the "Dartmouth Descriptivists."[16]

Another label applied to the moral theory of Gert and colleagues is rule-consequentialism because it is rule-based (Keulartz, 2004; Sheehan, 1999). However, just like the label of deductivism they denied it too: "we wish to make the point that the way our approach has often been described, namely, as 'rule-based ethics,' is simply wrong. Although rules are one aspect of our account of morality," they claimed, "there are other essential components of the moral system: ideals, specification of the morally relevant features of situations that help focus the search for and the comparison of facts, and an explicit procedure for dealing with conflicts among rules and ideals" (Gert et al., 1997, p. ix). To justify their claim, Gert and colleagues then applied their moral system to several important bioethical topics, including, for example, malady, competence, paternalism, and euthanasia.

Finally, Lustig insisted that the moral system of Gert and colleagues does not help much. "In just those hard cases where the reader longs for clearer guidance from the authors," argued Lustig, "she is left, disappointingly, with the need to weigh the incommensurable harms proscribed by various rules without a common metric for judgment" (2001, p. 323). Indeed, Carson Strong contended that the application of their moral system "can yield answers that are at odds with one's considered moral judgments" (2006, p. 52). For example, he cited the case of a brother lying to his sister about test results, whose family has a history of Huntington disease. Should the healthcare provider participate in that lie, when asked? Although Gert would justify the deception, Strong argued that a "fully informed, impartial rational persons can disagree over this type of rule violation" (2006, p. 53).

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[16] There are subtle differences among the Dartmouth descriptivists, as they admit. For example, "Gert prefers to have very simple and general rules with a well defined procedure for determining justified exceptions to these rules, a procedure that very closely resembles the procedure that generates these rules in the first place," while "Green, reflecting his Kantian background, prefers to emphasize the basic methodology and to allow every instance of moral decision making to proceed de novo, as a hypothetical morally 'legislative' process in which impartial rational persons are conceived of as proposing and voting for relevant rules governing the case that, though general, are far more complex" (Green et al., 1993, p. 482).

13.1.3.2 Common Morality

In *Bioethics: A Return to Fundamentals*, Gert and colleagues presented a mature version—or what Henry Richardson (1999) calls "the capstone"—of their moral theory (Gert et al., 1997). They lamented the paucity of moral theory discussion, especially in contemporary bioethical textbooks: "there is no systematic investigation of different approaches, no attempt to discover or validate the foundations of these approaches, and no detailed attempt to relate these approaches to the systematic solving of medical ethical problems" (Gert et al., 1997, p. vii). In other words, contemporary bioethics is simply *ad hoc* and unsystematic in its analysis of ethical dilemmas. The goal of Gert and colleagues was to rectify this problem by presenting a theoretical foundation for bioethics, especially along the lines developed earlier by Gert.[17] Thus, the previous systematic and the public features of morality loomed large in their discussion.

Gert and colleagues now explicate a "common morality," i.e. "widespread agreement on most moral matters," in which to frame the notion of public morality (Gert et al., 1997, p. 16). Morality as a public system is informal in nature—"a system that has no authoritative judges or procedures for determining the correct answer"—in contrast to a formal system such as a law or to a formal public system, e.g. a game (Gert et al., 1997, p. 22). It depends upon "rationally required beliefs," which if doubted would result in a person being labeled irrational. According to Gert and colleagues, "there is no way to guarantee that all rational persons will agree unless they use only beliefs that all of them share, namely, rationally required beliefs" (Gert et al., 1997, p. 33).

Common morality is touted as an alterative to principlism, in that it provides a theoretical justification for morality by remaining close to shared moral intuitions. "The alternative's account of morality stays close to the ordinary, common morality with its rules and ideals," claims Clouser, "which in turn are grounded in aspects of human nature" (1995, p. 219). Gert also provides a precise definition of common morality: "the moral system that thoughtful people use, usually implicitly, when they make moral decisions and judgments" (2004, p. v). Although common morality is a system for deciding difficult moral issues, it does not necessarily result in the same answer to more controversial issues. Indeed, as Gert concedes common morality "allows for impartial rational persons to sometimes disagree on how people morally ought to behave" (2004, p. 6). As such, common morality is complex in nature—as complex as human nature itself upon which it is grounded. "Although common morality is a system," concludes Gert, "it does not remove the need for human judgment" (2004, p. 148).

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[17] *Bioethics* represented a compilation of ideas presented in two previous books: *Philosophy in Medicine* (Culver and Gert, 1982) and *Morality: Its Nature and Justification* (Gert, 1988). However, as Quanta (2000) notes, *Bioethics*, although it shares certain features with its predecessors, is a break with these works in an effort to forge a deeper connection between bioethics and morality.

In an exposition on common morality, Clouser rehearsed the problem with principlism: it is "ad hoc, without reasoned foundation, misleading, and unable to give guidance" (1995, p. 235). To their credit, Beauchamp and Childress responded to this criticism. Interestingly, they now advocate their own version of common morality to ground the four principles. "We," claim Beauchamp and Childress, "will refer to the set of norms that all morally serious persons share as *the common morality*. The common morality contains," they explain, "moral norms that bind all persons in all places; no norms are more basic in the moral life" (2001, p. 3).

Importantly, the appeal Beauchamp and Childress make to common morality is both normative and non-normative in nature. It is normative, in that common morality provides a set of moral standards, and a failure "to abide by these standards is to engage in improper conduct" (Beauchamp and Childress, 2001, p. 4). Their non-normative appeal is empirical in nature and states that "persons in all cultures who are *serious about moral conduct* do accept the demands of the common morality" (Beauchamp and Childress, 2001, p. 4). Moreover, they acknowledge that the norms of common morality are not absolute in nature but can be violated under special circumstances.

There has been considerable criticism of common morality, especially that espoused by Beauchamp and Childress. For example, Leigh Turner (2003) claims that there is no empirical evidence to demonstrate that common morality exists. No field studies have been conducted to support it. Rather, Turner argues that there exists a plurality of ethical norms that are culturally dependent. DeGrazia also takes Beauchamp and Childress' version of the common morality to task. "I believe," claims DeGrazia, "the authors' discussion of common morality—while admirable in reflecting both deeply democratic instincts and a willingness to innovate—goes much too far in the direction of anti-theory and a tacit embrace of the moral status quo" (2003, pp. 224–225). His fear is that such a morality could easily lead to immorality.

Beauchamp (2003b) responded to the above criticisms. He acknowledged that some moral norms are culturally dependent but not the core set of moral norms that make up common morality. These core norms are not a broad set of norms but narrowly delimited as awareness that a certain behavior, such as lying or stealing, is wrong. Indeed, Veatch (2003) claimed at the time that the Kennedy Institute was sponsoring field studies to test the basic tenets of common morality.

13.1.3.3 Casuistry

Casuistry has a rather checkered past (Jonsen and Toulmin, 1988). With its origins in the classical Greeks, casuistry reached its zenith in the mid-sixteenth century. One of the early proponents of casuistry was Cicero (106 BC–43 BC), who in *On Duties*, presents a series of morally debatable episodes. According to Jonsen and Toulmin, "Cicero's *On Duties* was the first 'case book' that related a number of these episodes in order to analyze their moral logic" (1988, p. 75). Cicero's influence was felt for centuries thereafter but eventually was eclipsed by other moral approaches. With the rise of moral dilemmas during the 1960s, however, the time was ripe for the resurgence of casuistry. This resurgence was to find its fulfillment in medicine, in which cases are the basic unit of concern. Although there was a rich moral theoretical background in which proponents of casuistry labored, no theory was developed in which to embed casuistry; rather, "the casuists took this theoretical background for granted" (Jonsen and Toulmin, 1988, p. 250).

Besides a lack of theoretical underpinning, there was no explicit casuistry method or case analysis procedure. From examination of casuistic practices, Jonsen and Toulmin (1988) identified six steps that define such a method or procedure. The first is a dependence on paradigms and analogies, in which a particularly robust case serves as a paradigm to which all other cases are referred to by analogy. The next step is the use of a moral maxim to analyze the case, which often summarizes practical wisdom and is seldom if ever proved or demonstrated formally. The third step is to consider a case's circumstances, including "who, what, where, when, why, how, and by what means" (Jonsen and Toulmin, 1988, p. 253).

The fourth step is the qualification of a case in terms of its probability. The likeliness of the case ranges from "highly certain" to "hardly probable." The next step is appeal to cumulative arguments to support a particular moral position *vis-à-vis* a case under consideration. "The conclusion that an opinion deserved to be ranked as 'more' or 'less' probable," claimed Jonsen and Toulmin, "followed not by any rigorous logic—although the casuist are mindful, if not meticulous, about logic—but from the accumulation of many and varied supporting reasons" (1988, pp. 255–256). The final step is then the pronouncement of a resolution for the case under analysis. According to Jonsen and Toulmin, the case analysis of casuistry is applicable to ethical issues in medicine as an alternative to principlism.

Jonsen offers a general definition for contemporary casuistry, especially as it is used in modern bioethics: "the method of analyzing and resolving instances of moral perplexity by interpreting general moral rules in light of particular instances" (2004, p. 374). He claims that the casuistry method is particularly applicable to bioethics, especially with the introduction of modern technology that often blurs the moral boundaries particularly for beginning and end of life issues. "The differing circumstances of individual patients, the topics (the significant categories into which a medical-ethical decision can be factored), and the maxims (such as 'do no harm' or 'respect the patient's informed choices')," argues Jonsen, "are each in their own way crucial to the resolution of any case" (2004, p. 379).

According to Jonsen (1995), however, casuistry is not adverse to principles *per se* but rather complementary to them. Nor is it situational or contextual in nature. Rather, principles function in varying degrees in resolving a case. In some cases principles loom large, while in others qualifiers to the principles are necessary and required. Finally, casuistry is not theory independent but can accommodate any particular ethical theory.

Ronald Carson (1997) also proposed a form of casuistry as an alternative to principlism. His chief criticism of principlism is that it impoverishes the moral decision-making process by reducing it to a logical algorithm. "In my view," claims Carson, "the principles-and-applications approach is itself flawed because the moral predicaments of medical care are largely impervious to the requirements of logic" (1997, p. 184). In his experience, Carson observes that patients bring to the clinical encounter the facts concerning their illness.

The task of the medical profession is to help the patient articulate their illness experience: "one of the central moral challenges doctors must take up is that of helping sick people to 'find their voices' " (Carson, 1997, p. 182). To achieve that task, Carson advocates that physicians should embrace the role of interpreter for the patient's illness experience, especially in a highly technical and often confusing and intimidating medical world. An important requirement for that role is empathy, as it empowers the physician to tap into the patient's metaphoric recounting of the illness experience. "A metaphoric capability," explains Carson, "is the capacity to imagine 'what is must be like'—not to know with any certainty how it *is* with another person, but to imagine, to get a provisional working sense of what it is *like* to suffer in this way or that" (1997, p. 182). Thus, the physician must make contact with the patient in order to assist the patient during the illness experience, especially with respect to the ethical dilemmas that often arise during treatment.

To attain an adequate level of empathy for making ethical decisions, Carson draws upon the use not of principles but of maxims. A maxim is a "provisionally settled opinion" that functions to guide the physician in reflective moral inquiry and practice. In contrast to principles, maxims illuminate rather than prescribe a course of action. "By throwing the light of provisionally settled opinion on a concrete situation," explains Carson, "[maxims] enable us to interpret what direction subsequent events ought to take in order to maintain and promote the good and select or devise the action most appropriate to that end" (1997, pp. 185–186).

Maxims are particularly suited as "rules of thumb," which have developed throughout history. "Casuistry," Carson maintains, "extends the maxims that encapsulate received wisdom to unforeseen cases and new problems. This is no application of the known to the unknown but an extension," he insists, "in which light is thrown forward on the situation to be interpreted as well as backward upon the maxim so that the received wisdom is adjusted to take the new, heretofore unimagined, situation into account" (1997, p. 186). Carson's moral reflective casuistry takes into consideration not only a patient's particular illness story but also received wisdom into consideration during ethical deliberation. There is then a reciprocal relationship between the particulars and the general such that ethical deliberation and progress are possible.

13.1.3.4 Narrative Ethics

Over the past several decades, ethicists developed a narrative approach to morality. Narrative ethicists "gave moral theory a 'personal turn' by challenging the orthodox assumption that ethics has primarily to do with right conduct among strangers, is universalizable, and favors no one" (Nelson, 1997, p. viii). For example, David Burrell and Stanley Hauerwas claimed that ethical reasoning is distorted when separated from the narrative context; rather, they argued that "narrative constitutes the form that does justice to the kind of objectivity proper to practical reason" (1977, p. 112).

Narrative ethics, in distinction to the standard, impartial ethical systems, seeks to incorporate the details of a person's story into moral deliberation and reasoning rather than marginalizing or eliminating them. Some narrative ethicists argue that "all moral knowledge is based upon the story of one's own social group, and thus that the so-called 'Enlightenment project' of articulating universally binding moral principles must necessarily fail" (Arras, 1992, p. 1201).

Thomas Murray (1997) examined the nature of narrative, as it applies to ethics. He acknowledged that narrative assists in the acquisition of "moral insight," which can affect change in one's moral vision. How narrative affects this change is not clear, but, according to Murray, "it does not seem to be reducible to learning some new propositions about morality or grasping the truth of some proposition we had heard earlier but whose proof eluded us" (1997, p. 5).

Murray identified four possible ways in which narrative functions ethically. The first is through moral education. For example, the stories told to children as fairytales and to adults as cultural myths are critical for the formation of moral sensibilities. Although this function is uncontroversial the question arises whether narrative ethics functions in substantive means, especially in medicine. He addressed this question by first examining the methodological role of narrative. Bioethicists are concerned with medical cases as narratives. "What we know," claimed Murray, "is the rightness or wrongness embodied in the case. The moral content, that is," he maintained, "resides in the case; the propositions we draw from it are interpretations of that content" (1997, p. 8).

Murray also discussed the role of narrative in terms of moral discourse. He distinguished several means by which ethicists use narratives as discourse, including hypothetical and foundational stories. "Much, if not all, moral discourse, including moral theory," claimed Murray, "is embedded within, conditioned by, and conducted in narratives. This is true, I suspect" he continued, "even for certain works in bioethics that claim to be completely above the fray, claim merely to explicate what is given to us by unaided reason" (1997, p. 10).

A final role of narrative is in moral justification. "Our grasp of the rightness or wrongness of the stories," according to Murray, "can be more secure than our faith in some proposition about ethics. Indeed," he argued, "the stories function either to reinforce our confidence in the proposition in question, or to show its defects" (1997, pp. 9–10). Narratives secure moral knowledge by identifying the crucial features of a story's plot and by providing those features that are often ignored in propositional ethics.

As alluded to above medicine and its ethics are particularly open to narrative analysis, since case histories and their medical records are the central text of medical practice. As examined earlier, the medical record, however, is often focused on the scientific and technical components of the patient's illness story and not the personal details. Rita Charon (2006) developed a narrative approach to medical ethics and practice, to counter the traditional medical record. It is based on what she calls "narrative competence," which is composed of attention or mindfulness of the patient's story, and of an ability to represent that story of illness sensitively, and of a capacity to affiliate with the patient's story.

Narrative competence profoundly affects both medical practice and bioethics. "In the same way that narrative competence alters what the nurse or doctor does in the office or on the ward," argued Charon, "narrative competence fundamentally shifts what the ethicists does with patients, with families, with health care professional, and with the self" (2006, p. 203). That shift for ethicists allows them to understand better and to empathize more intimately with the patient and to provide council that is in line with the patient's values.

Finally, Anne Jones proposed an expansive version of narrative ethics for medicine. "In this version," according to Jones, "narrative ethics presumes a nonhierarchical narrative paradigm that empowers patients and families—those in whose lives the consequences of medical and ethical decisions will be lived out—to make decisions for their lives, whenever possible, relying upon doctors for their expert knowledge of medicine more than for their expertise in ethics" (1997, p. 194). To that end, she advocates a "dialogical" process in which the patient and physician reach a consensus concerning what course of action to take.

For example, in Darren's case—a fictional case from Perri Klass' *Other Women's Children* in which a young boy dies from AIDS—Jones (1996) contends that a narrative approach provides a philosophically robust means of resolving ethical and legal dilemmas in medicine, especially as in this case for end of life and custody issues. "Nonhierarchical and dialogic in nature, a narrative approach," claims Jones, "seeks to encourage all those involved in a particular ethical dilemma to become engaged in its resolution. Because," she explains, "ethical decisions must be enacted by persons who are powerfully emotional beings, abstract logic may not be sufficient to achieve the best resolution" (1996, p. 283).

13.2 The Future of Bioethics

As bioethics developed over nearly the past half century, commentators have lamented its collusion with the biomedical establishment. For example, in a review of the literature on the inception of bioethics Robert Martensen states: "During the past thirty years, biomedicine, now firmly in the hands of corporations in the United States and elsewhere, has become a biomedical industrial complex that often conflates health care with its own disciplinary perspectives and interests. Even more troubling," he decries, "is the possibility that the large social claims that biomedicine has successfully made, aided partly, I would argue, by the legitimacy bioethics pronouncements have afforded, may have displaced communitarian health care approaches that have a better track record of improving health on a population basis" (2001, p. 175). He appeals for a comprehensive bioethics that is sensitive to Potter's broader conception of bioethics.[18]

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[18] "Bioethicists," writes Peter Whitehouse, "too often mirror the values of our health care system rather than challenge them" (2003, p. W30). In collaboration with Potter, he introduced a notion of "deep bioethics" that incorporates both the social and spiritual facets to ethical thinking. Although Potter considers deep bioethics a third "wave," noted Whitehouse, Potter later abandoned it. Whitehouse now calls for a rebirthing of bioethics based on deep bioethics.

Martensen concludes the review with the recognition that bioethics is evolving. Part of that evolution includes Rosemarie Tong's recent proposal for a comprehensive healthcare ethics "that aims to encompass not only most medical ethics and bioethics issues but also a wide variety of other health-related issues characterizing the times in which we live" (2007, p. 1). These issues range from traditional problems concerning life and death to gene therapy and reproductive and therapeutic cloning. She too acknowledges Potter's broader conception and bases her healthcare ethics on Michael Boylan's "personal worldview imperative," which states: "All people must develop a single, comprehensive and internally coherent worldview that is good and that we strive to act out in our daily lives" (Boylan, 2000, p. 22). To that end, Tong argues that "we must all consider a wide variety of ethical theories, and then decide which one(s) not only best reflects our personal worldview but also meets the standard of rational acceptability" (2007, p. 9).[19]

Finally, others champion a notion of biomedical ethics, for several reasons, to cover, in part, the various expressions of ethics in medicine and their various uses, especially with respect to how they apply to the biomedical sciences. First, the notion of biomedical ethics is more comprehensive than the notion of medical or clinical ethics in that it includes the issues arising from biological research. According to Saul Ross and David Malloy, biomedical ethics incorporates "the complex moral issues which arise in medical practice…and emerge in the research fields associated with medicine and health care" (1999, p. 42). Second, the notion of biomedical ethics, in contrast to bioethics, "has the virtue of making more explicit the concern with issues associated with the practice of medicine" (Mappes and DeGrazia, 2006, p. 1). Finally, the notion of biomedical ethics is not as expansive as Tong's notion of healthcare ethics, which includes the social and legal dimensions of medical knowledge and practice.

13.3 Summary

The state of current bioethics and its principlism is driven by the metaphysical and epistemological dimensions of the biomedical model. Although principlism should resolve the quality-of-care crisis, especially with its emphasis on autonomy, it leads to a "sick" autonomy that has worsened the crisis (Tauber, 2005). Humanistic or humane modification of this model leads to a more humane approach to bioethics, in terms of its scope. Moreover, medicine is seen as a moral enterprise between two consenting parties, the patient and the physician (Cassell, 1991; Tauber, 2005).

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[19] Not all medical ethicists agree with this interpretation of the terms. For example, Loewy writes: "bioethics in general is understood as a more inclusive term that covers not only topics directly concerned with the ethics of healthcare but also broader biological problems. Healthcare ethics, on the other hand," he continues, "is generally understood as more limited to issues dealing with illness and health" (2002, p. 388).

Thus, ethical concerns are driven by that relationship, which in turn drive the metaphysical and epistemological dimensions of humanistic models. On the other hand is narrative medical ethics, which is often championed as a replacement for the principlist approach and which serves to reinstate the patient's illness story and values into determining the resolution of ethical issues. It is the narrative approach that is hailed to resolve the quality-of-care crisis.

Chapter 14
Emotionally Detached Concern or Empathic Care

Besides the value of health or wellbeing and the disvalue of disease or illness, as well as besides the normative ethical theories and the four principles that under gird contemporary bioethical principlism, modern medical knowledge and practice are influenced by two chief values that inform the ethical or moral stance or attitude of physicians—emotionally detached concern and empathic care. For the biomedical practitioner, the chief value is emotionally detached concern. "People enter medicine," according to Manish Raiji, "out of *concern* for the sick and, for the more ambitious of them, the betterment of society as a whole" (2006, p. 295, emphasis added). Certainly the biomedical practitioner is concerned about the patient's diseased state, but from a detached—particularly from the patient's and physician's—emotional state. Emotions are viewed as detrimental to the practice of scientific medicine, just as they are for the practice of natural science. For the humanistic or humane practitioner, however, scientific medicine is embedded within empathic care that includes the patient's and the physician's emotional state.

Warren Reich reconstructs the distinction between emotionally detached concern and empathic care in terms of two radically different meanings of care: "In the context of healthcare, the idea of care has two principal meanings: (1) taking care of the sick person, which emphasizes the delivery of technical care; and (2) caring for or caring about the sick person, which suggests a virtue of devotion and concern for the other as a person" (2004a, p. 361). "Taking care of" refers to the physician's technical competence *sans* emotional engagement. It is a concern for the objective clinical data pertaining to the patient's diseased state and is often reduced to a legal minimum of "due care" (Reich, 2004a). "Caring for," however, includes an empathic or emotional engagement as a critical component of medical practice. It involves altruistic values and is part of the moral structure that under girds humanistic medical knowledge and practice (Reich, 2004a). In this chapter the emotionally detached concern of the biomedical model ("taking care of") is explored initially followed by contemporary challenges from humanistic practitioners in terms of empathic care ("caring for"), especially with respect to an ethic of care.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

14.1 Emotionally Detached Concern

In an essay entitled “From the heart,” Rachel Remen recounts the story of a first year medical student who suddenly collapsed and died from a congenital heart defect, while playing basketball. The following year the student’s heart was used in a pathology teaching lab at the medical school he attended to illustrate the defect. One of the medical students realized whose heart the students were examining and as she “looked out of the corner of her eye. No one around her seemed to react. All her classmates wore expressions of detached scientific interest” (Remen, 2002, p. 93).

Remen then expounds upon the professional mask or gaze a physician wears in order to practice his or her trade. That gaze is meant to protect the physician from the emotional turmoil that medicine brings on a daily basis. “Medical training instills,” concludes Remen, “a certain scientific objectivity or distance…In particular, the perspective of the heart is seen as unprofessional or even dangerous” (2002, p. 93). The biomedical model is predicated upon the value of emotionally detached concern, which has been chiefly responsible for the current quality-of-care crisis in modern medicine.

In the early to mid twentieth century, medical practitioners and educators subscribed to a notion that in order for physicians to apply their trade they must not allow the patient’s or their emotions to interfere. A physician’s technical competence must be severed from sympathetic care. For example, Richard Cabot (1926) championed this view, arguing that physicians should attend to the body and specifically to the diseased body part. Rather than emotional attachment to the patient, Cabot claimed that the chiefs of medicine model “the ‘technique’ of courtesy to most unpromising old wrecks of humanity” (1926, p. 26).

Cabot illustrated this ethical ideal of courtesy with a clinical encounter between one of his chiefs and a female patient. “He [the chief] brought the atmosphere of a summer garden,” as Cabot narrated the encounter, “to meet this miasmic fog [the patient]. The fog did not yield. The women showed no slightest appreciation of his kindness, no melting of her scorn. But,” Cabot related triumphally, “he carried through the interview as he had begun it and still bowed and smiled to her oblivious back as she stumbled sullenly away” (1926, p. 32). For Cabot, ethics, if it has any import for the physician’s behavior in a clinical encounter, is ruled by an ethical code of conduct.

In the early twentieth century, emotionally detached concern was heralded as a critical component of medicine’s social structure, especially in terms of the patient-physician relationship. Lawrence Henderson, Talcott Parson, and Renée Fox each explicated its position within medicine’s social structure. Henderson, a well known physiologist, argued that medicine—although an applied science—was still practiced in terms of its social structure as it was from Hippocratic times. He suggested a new theory for the patient-physician relationship based on an analogy to Willard Gibbs’ physico-chemical systems. Recognizing the danger of sentiment or emotions in social systems like medicine, Henderson proposed the following “rule of conduct:

The physician should see to it that the patient's sentiments do not act upon his sentiments and, above all, do not thereby modify his behavior, and he should endeavor to act upon the patient's sentiments according to a well-considered plan" (1935, p. 821).

Henderson also counseled physicians to beware of their own feelings and emotions, since they are likely to be "harmful" and "irrelevant" to the patient's care. The physician should "try to do as little harm as possible, not only in treatment with drugs, or with the knife, but also in treatment with words, with expression of your own sentiments and emotions. Try at all times," Henderson admonished, "to act upon the patient so as to modify his sentiments to his own advantage, and remember that, to this end, nothing is more effective than arousing in him the belief that you are concerned whole-heartedly and exclusively for *his* welfare" (1935, p. 823).

Parsons (1951) conducted one of the first modern social analyses of the medical system, especially in terms of a patient's "sick role" and a physician's response to it. That response was structured in terms of four features that guide the physician's behavior in treating the patient. These features constitute a structure that permits the physician to access "the 'particular nexus' of his patients to perform his function" (Parsons, 1951, p. 459). They include "universal achievement" (the medical knowledge general applicable to all medical practitioners), "functional specificity" (technical specialties), and "collectively-orientation" (social consensus concerning altruistic behavior) (Parsons, 1951, pp. 454–465).

The final feature, "affective neutrality," was germane to a physician's emotional response. "The physician," according to Parsons, "is expected to treat an objective problem in objective, scientifically justifiable terms. For example," he claimed, "whether he likes or dislikes the particular patient as a person is supposed to be irrelevant, as indeed it is to most purely objective problems of how to handle a particular disease" (1951, p. 435). The emotional needs of the patient should be the patient's responsibility and his or her family's, but not the physician's. The notion of affective neutrality, then, "is a critical distancing reaction which prevents the practitioner from entering too sympathetically into the patient's situation. The doctor is expected to be neutral in judgment and to exercise emotional control" (Ford et al., 1967, p. 3).

Fox employed Parson's notion of affective neutrality to interpret evidence obtained from a sociological study on patient-physician interactions at a research hospital, in which experimental treatment protocols were used to treat patients. She utilized the terms "detachment" and "concern" to describe the tension the physician faces in medical practice. "In the 'emotional aspects' of his relationship with the patient," concluded Fox, "the physician is expected to maintain a dynamic balance between attitudes of 'detachment' and 'concern.' He is expected," she continued, "to be sufficiently detached or objective toward the patient to exercise sound medical judgment and maintain his equanimity. He is also expected to be sufficiently concerned about the welfare of the patient to give him compassionate care" (quoted in Ford et al., 1967, p. 4).

Later, in association with Howard Lief, Fox introduced in a well known article, "Training for 'detached concern' in medical students," the phrase "detached concern" and described the program or process by which medical students are taught to detach themselves from emotional involvement with patients (Lief and Fox, 1963).

As generally acknowledged, most medical students enter medical school with a deep sense of concern for wanting to help people. During the process of becoming a physician, however, they are taught to distance themselves from normal emotional responses to patient's disease and death.

One of the first steps towards detachment occurs in gross anatomy. There are several mechanisms used during dissection of cadavers, almost unconsciously, to strip students of normal emotional responses in the face of a dead human being. The most profound or interesting one is to name the cadaver. At the time of their study names such as "Elmer" and "Bones" were popular, whereas for a previous generation of medical students "Hitler" and "Mussolini" were popular. The naming of cadavers "helped to reduce guilt derived from unconscious fantasies of defiling the body, albeit a dead one, of a human being" (Lief and Fox, 1963, p. 18). Naming is also an important mechanism for residents and other hospital staff when dealing with patients. For example, older patients who are quite ill and helpless are often referred to as "gomers" (George and Dundes, 1978; Leiderman and Grisso, 1985).

Emotionally detached concern was in response or reaction to the value of sympathy, in which the physicians and their emotions, as well as the patients and their emotions, were an integral part of medical knowledge and practice. The sympathetic physician was the standard from Hippocrates to nineteenth physicians such as Worthington Hooker: "Within the trajectory of medical thought from Hippocrates to Hooker, the physician's special tolerance of emotions enables an emotional understanding of patients that enhances his reliability and effectiveness" (Halpern, 2001, p. 21).

Sympathy was to some extent an occult force that the physician commanded for treating the patient. The underpinning of this force was a blind emotional response to the patient's pain and suffering. Although it was a morally admirable response it was generally ineffectual and often caused more harm than good. In addition, "Victorian culture steadily sentimentalized, feminized, and marginalized sympathy's connotative meaning, while at the same time the term was slowly devalued within medicine's scientific and professional discourse" (More, 1994, p. 20). By the beginning of the twentieth century to be sympathetic was to be unscientific.

In response to the abuse of sympathy, physicians proposed a chastened form of empathy that was stripped of its blind emotivism or at least a form of empathy in which the physician was cognizant of the patient's emotional state and especially the problems associated with it (Halpern, 2001; More, 1994). For example, in a well known and influential 1958 *JAMA* article Charles Aring distinguished between sympathy, which often hinders the physician's effectiveness in treating a patient, and empathy, which enhances that effectiveness. Drawing on a "good dictionary," Aring defined sympathy as "an affinity, association, or relationship so that whatever affects one, similarly affects the other" (1958, p. 449). He gave the illustration of a "provocative" patient who questions the physician's competence because of deep seated emotional issues, to which the physician unfortunately responds in kind.

In contrast, Aring proposed a notion of empathy, although similar to that of sympathy in terms of the physician's "appreciation" of a patient's emotional state, in which the physician remains detached yet interested. What is at issue for the physician is not to become incapacitated by the problems arising from a patient's emotional state. "The patient," counseled Aring, "should be allowed his own problems without a need to partake of them" (1958, p. 449). In other words, the physician must endeavor to remain separate from these problems in order to be effective in treating the patient. "A subtle and significant feature of a happy medical practice," concluded Aring, "is to remain unencumbered by the patient's problems" (1958, p. 452). The key to empathy is the physician's reflection upon his or her own emotional constitution based on personal experiences and to apply an intellectualized form of that reflective process in addressing the patient's emotional needs or state.

Hermann Blumgart (1964) claimed that Aring's notion for the appreciation of the patient's emotional state is denoted, in medical circles, as "neutral empathy." Blumgart, however, deemed that "compassionate detachment" is a better or more accurate description of Aring's notion. The influence of Aring's notion cannot be understated. For example, Blumgart related a personal encounter during his final year in medical school. He was assigned a patient suffering from Addison's disease and recommended surgical drainage for an abscessed tooth. His instructor, William Smith, pointed out that there is a very good chance that the patient could die from the drainage procedure and asked Blumgart how he felt about a patient dying under such conditions. Blumgart responded he would "feel very bad."

> Well then, [Smith said] you ought to leave medical school this instant and abandon the profession of medicine. If after giving all of your time and energy, and to the very best of your ability having weighed the risks and benefits, you grieve over ill fortune, your life will be tormented by the past, and you will be of little use to your patients in the present or to yourself in the future. To each and every patient you must give your best—and, having done so, you must accept with equanimity bad fortune as well as good. Unless you learn this, you had better not be a doctor (1964, p. 451).

The emotional detachment necessary for the practice medicine was a lesson Blumgart never forgot.[1]

One of the main assumptions of emotionally detached concern is objectivity or neutrality towards the patient's—and physician's—emotional state. "The model of detached concern," according to Halpern, "presupposes that knowing how the patient feels is no different from knowing that the patient is in a certain emotional state" (2003, p. 670). Objectivity in medical practice was a result historically of Osler's model of equanimity: "Osler denied that physicians' effectiveness depends upon emotional engagement with patients" (Halpern, 2001, p. 22).

Osler, in an 1889 valedictory address at the University of Pennsylvania, "Aequanimitas," argued that physicians must detach from their own emotions to the patient's condition in order to evaluate properly the patient. He identified two

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[1] Menninger also acknowledged the detachment students are taught in medical school and residency: "In his training, the physician is taught to maintain emotional distance from the patient, i.e., to sense the patient's experience empathically without becoming so involved sympathetically that the physician's rational and effective clinical judgment is impaired by emotional involvement" (1975, p. 837).

virtues for clinical success. The first was the physical or bodily virtue of "imperturbability," which he took to mean "coolness and presence of mind under all circumstances, calmness amid the storm, clearness of judgment in moments of grave peril, immobility, impassiveness" (Osler, 1943, p. 4). The mental virtue was equanimity, which allows the physician "to bear with composure the misfortunes of our neighbours" (Osler, 1943, p. 7).[2] According to Halpern, "Osler's rhetoric promotes the idea that detachment serves rationality…No meaningful way exists to compare emotional perspectives for their accuracy or appropriateness to a person's circumstances, because the only reliable facts about humans are objective facts about bodies as things" (2001, p. 24).

Under the biomedical model of contemporary medical knowledge and practice, the physician's concern for the patient's body and its parts is detached from the emotions of either the patient or physician: "modern medicine has now evolved to the point where diagnostic judgments based on 'subjective' evidence—the patient's sensations and the physician's own observations of the patient—are being supplanted by judgments based on 'objective' evidence, provided by laboratory procedures and by mechanical and electronic devices" (Reiser, 1978, p. ix). The notion of detached concern satisfies the necessity on the part of physicians to be engaged with the patient's physical needs but only in a concerned fashion. "The model of 'detached concern' thus acknowledged the need for effective and compassionate communication," opines Ellen More, "without sacrificing the profession's claims to neutrality and objectivity. Patient and professional remained two 'separate' parties" (1994, p. 31).

There are a number of reasons why the medical profession excluded emotions from the practice of medicine, in terms of detached concern or a chastened form of empathy. Halpern (2001) identified four of them. The first is that physicians must often perform difficult and painful procedures that take a toll on the physician's emotions. A mask of emotionally detached concern protects the physician from the emotional pain of these encounters. Another reason is that emotionally detached concern protects the physician from burnout, especially emotional burnout. Next, emotionally detached concern allows the physician to distribute healthcare fairly and equally to patients without preference for one or another based on feelings and especially given the time constraints of managed care. Emotionally detached concern then ensures impartiality.

The most important reason, according to Halpern, is that emotions are too subjective and thereby interfere with the correct or accurate diagnosis or treatment of the patient. The gaze of emotionally detached concern "enables doctors to understand their patients' emotional experiences accurately, free from their own emotional bias" (Halpern, 2001, p. 17). More identified another reason in terms of gender: a chastened empathy provides "an interactive but fundamentally

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[2] Osler admitted, as Halpern acknowledges, that he was not always consistent in maintaining emotional distance with patients: "While preaching to you a doctrine of equanimity, I am, myself, a castaway" (1943, p. 10).

detached relationship that did not threaten the roles, values, or personal security of a male-gendered professionalism" (1994, p. 31).

Finally, how is concern a value? Concern is a powerful basic or primitive value of one human being's apprehension for the state or plight of another. It motivates people to act and often heroically for the better or enhancement of others. As noted already many, if not most, medical students enter medical school with the profound sense of concern for helping patients. Unfortunately, given the age and developmental stage of most medical students this native concern for the welfare of others is underdeveloped and students are unable to sustain it in the face of the medical school's indoctrination process. Instead of fostering and nurturing this native concern, medical school programs strangle its emotive component to reduce it to a bland and scientific concern for curing the patient's disease. For example, "hazing, strange-making, and symbolic inversion" are effective means by which medical students and residents are stripped of their native empathy for a patient's suffering (Davis-Floyd and St. John, 1998, p. 51).

14.2 Empathic Care

As others before her, Halpern palpated an essential tension in the practice of medicine: "On the one hand, doctors strive for detachment to reliably care for all patients regardless of their personal feeling. Yet patients want genuine empathy from doctors and doctors want to provide it" (2003, p. 670). The tension remains unresolved because the medical profession values emotionally detached concern or a chastened or masculinized form of empathy over genuine or authentic empathic care. No single factor is more responsible for the quality-of-care crisis in contemporary medicine than the value of emotionally detached concern.

As Walter Menninger acknowledged some time ago, many physicians are competent in medical technology but incompetent in people skills. "There are numerous examples," according to Menninger, "who are absolutely superb technicians, with all the latest knowledge and skill, but who approach patients in such a cold manner as to prompt doubt and distress" (1975, p. 837). To resolve the problem, he recommended emotional attachment to the patient.

Today, there is a movement, especially with respect to humanistic or humane models of medical knowledge and practice, to establish genuine empathic care in medicine. "Detached concern," according to William McMillan, "doesn't cut it anymore. Patients don't care how much you know until they know how much you care" (1996, p. 223). There are two dimensions to this movement. The first is the introduction and redefining of the notion of empathy, which is discussed in the first section. The second is the development of the ethic of care, especially by feminists and others, which is explored in the final section.

14.2.1 Empathy

Although emotionally detached concern is a predominate value for the biomedical model, Remen, from her own clinical practice, stresses that it is actually dangerous for clinical medicine: "I found that abandoning my humanity in order to become a service made me vulnerable to burnout, cynicism, numbness, loneliness, and depression"—all of the problems from which detached concern is supposed to protect the physician (2002, p. 93). The mask of professional detachment is not only bad for the physician but also for treating patients and is one of the prevalent reasons for contemporary medicine's quality-of-care crisis. The core of medicine is not emotionally detached concern but an empathic care or compassion for the other. "The heart," according to Remen, "has the power to transform experience" (2002, p. 93). In other words, physicians must connect with rather than detach from their patients, especially their emotional states in order to provide genuine healing—i.e. to transform brokenness and illness into wholeness and healing.

Halpern also questions whether emotionally detached concern or an empathy that is detached or at best simply appreciative of the patient's emotional state is appropriate for clinical medicine. Detached concern leads to errors in medicine from a patient's—or even a physician's—emotional irrationality. These errors result in distortions of the medical worldview for both patient and physician. Halpern cites a clinical case involving a woman who lost all hope after a second amputation from complications associated with diabetes and kidney failure and from her husband's abandonment. The patient refused treatment because of the depression brought on by her situation and her medical team respected her decision. However, in the past the patient experienced depression but through medical intervention overcame it. She died shortly thereafter.

Halpern insists that both the patient and the medical team, in an effort to practice good, ethical medicine, failed to address the patient's—as well as their—irrational fears. "Detachment," opines Halpern, "does not make medicine more rational; rather, it forces irrationality underground, where it poses as certainty about the future and irrational assumptions. Detachment is a poor strategy," she maintains, "either to help patients overcome emotional irrationality or to help physicians detect both their own and their patients' emotional irrationality" (2001, p. 29). She contends that empathy is the cure for these errors of emotional irrationality occasioned or fostered by detachment.

Empathy, indeed, has become a rallying point for some medical professionals to reshape the emotionally detached clinical gaze and to reconnect the patient and physician, especially at an emotional level. The term is derived from *Einfühlung*, coined by Robert Vischer (1847–1933) and used by others such as Theodor Lipps (1851–1914) in late nineteenth-century German aesthetics to describe the process of projecting oneself into an object of beauty (Halpern, 2001; Katz, 1963; More, 1994; Peitchinis, 1990; Wispé, 1987). In his 1909 *Lectures on the Experimental Psychology of the Though Processes*, Edward Titchener (1867–1927) adapted the term for psychology and used the Greek term *empatheia* to translate it into the

English term "empathy"—*em* for "into" and *pathos* for "feeling." However, the term changed meanings for Titchener during his career. "In the beginning (1909)," according to Wispé, "it represented an amalgamation of visual and muscular/kinesthetic imagery (after Lipps) by which certain kinds of experiences were possible. Later (1915) it became a feeling, or projecting, of one's self into an object, and its implications were more social. It was a way to 'humanize our surrounding' " (1987, p. 23).

Since Titchener there have been a variety of definitions proposed for empathy. For example, Howard Spiro defines empathy as "a feeling that persons or objects arouse in us as projections of our feelings and thoughts. It is evident when 'I and you' becomes 'I am you,' or at least 'I might be you' " (1993a, p. 7). Ervin Staub defines empathy in general terms as "*apprehending another's inner world and joining the other in his or her feelings*" (1987, p. 104). Mark Barnett defines it as "the vicarious experiencing of an emotion that is congruent with, but not necessarily identical to, the emotion of another individual" (1987, p. 146). David Berger defines it in terms of psychoanalytic therapy as "an intrapsychic process in the therapist by which an understanding of the patient, particularly an emotional understanding, a capacity to feel what the other is feeling, is enhanced" (1987, p. 8). Finally, Robert Katz claims that empathy takes on different dimensions depending on the discipline in which it is used: "[its connotation] in biology as a form of instinctive reverberation, its definition in psychoanalytic theory as a form of identification, its equation in social psychology with experimental role-playing and in sociology as mutual understanding among members of the same in-group" (1963, p. 2).

Although there are a variety of definitions for empathy, there are common features by which to classify them. For example, Nancy Eisenberg and Janet Strayer (1987) identified two such features. The first and primary feature is affective. Almost all definitions of empathy include sharing of the emotions between the empathizer and the empathizee: "an emotional response that stems from another's emotional state or condition and that is congruent with the other's emotional state or situation" (Eisenberg and Strayer, 1987, p. 5). The second feature is cognitive in nature. They cited Wispé to illustrate this feature, who, in turn, quoted Heinz Kohut: "empathy is the 'mode' of cognition which is specifically attuned to the perception of complex psychological configurations'" (Wispé, 1987, p. 30).

Ruth MacKay (1990) distinguished three features or ways to categorize empathy. The first is in terms of behavioral response to the suffering of another, whether observed or perceived. She quoted S.K. Valle: "Empathy is the ability to respond to the feelings and reasons for the feelings the patient is experiencing in a manner that communicates an understanding of the patient" (MacKay, 1990, p. 9). The next way of categorizing empathy is in terms of a person's personality. Here she quoted G.L. Forsyth to illustrate this type of empathy: "Empathic individuals are those who posses keen insight, imaginative perceptiveness and social acuity about other persons" (MacKay, 1990, p. 6). Finally, MacKay (1990) noted those definitions that use "experienced emotion," in which the helper recognizes and responds to the helpee on the level of feeling.

Staub (1987) provided one of the most comprehensive classifications of empathy. The more basic category, in terms of being a precondition for the other categories, is cognitive empathy. According to Staub, cognitive empathy is "an awareness, an understanding, a knowing of another's state or condition or consciousness, or how another might be affected by something that is happening to him or her" (1987, p. 104). The second category is participatory empathy, which is a more general form of empathy in terms of everyday experience. Participatory empathy begins with cognitive empathy but soon transcends it. "A person," claimed Straub, "enters the world of another, tunes in to the other, feels with the other, participates in the other's ongoing experience, but usually without strong emotional or intense feeling of his or her own" (1987, p. 105). The next category, affective empathy, does involve these emotions and feelings. However, the experience of the emotions and feelings is not direct but vicarious. The final category is empathic joining in which the emotions and feelings are not vicarious but mutual. According to Staub, empathic joining is "*a sharing of emotion*, not in a participatory way, by entering another's experience, but by *the other's experience generating the same experience in oneself*" (1987, p. 107).

The development of empathy within a person is seen as the outcome of a multi-step process rather than a result from a single event or feeling. For example, Theodore Reik (1948) identified four steps in the process of empathizing with another. The first is identification, in which the empathizer recognizes the need of the empathizee. The next step is incorporation, in which the empathizer internalizes the emotional state of the empathizee and makes it his or her own. The third step is reverberation, in which the empathizer then responds to the empathizee's emotional state. The final step is detachment, in which the empathizer retreats from fusion with the empathizee in order to comprehend fully the empathizee's emotional condition.

Jochanan Benbassat and Reuben Baumal (2004), on the other hand, have recently proposed only three steps. The first is insight into the patient's emotional state. The next step is then engagement, which produces compassion for the patient's situation and a desire to intervene on the behalf of the patient. These three steps are similar to Reik's first three, with the exclusion of Reik's final step of detachment. James Marcia (1987), however, used Reik's steps for appropriating empathy in medicine and keeps the final step in order to maintain a distinction between the emotional state of both the therapist and patient.

In the literature, there has been some confusion over the distinction between sympathy and empathy, given their respective histories, and there have been several attempts to distinguish between them (Eisenberg and Strayer, 1987; Katz, 1963; MacKay, 1990; More, 1994; Spiro, 1993a, b; Wispé, 1986). For example, Katz demarcated between empathy and sympathy based on their respective purposes: "Practitioners of empathy are committed to objective knowledge of other personalities. If we use our own feelings, it is for the purpose of learning more about what actually belongs to the other person. But we do not exercise our own feelings," argued Katz, "to gratify our needs. When we sympathize, we are aware of our own state of mind and much of our attention is still devoted to our own needs. When we empathize we cannot fully escape our own needs but we discipline ourselves to use our feelings as instruments of cognition" (1963, pp. 8–9).

Wispé also distinguished between empathy and sympathy: "In empathy, the empathizer 'reaches out' for the other person. In sympathy, the sympathizer is 'moved by' the other person…The object of empathy is to 'understand' the other person. The object of sympathy is the other person's 'well being'…In brief, empathy is a way of 'knowing.' Sympathy is a way of 'relating'" (Wispé, 1986, p. 318). Finally, Spiro noted the following distinction between empathy and sympathy: "Sympathy brings compassion, 'I want to help you,' but empathy brings emotion. Without feeling there is no empathy" (1993a, p. 2). In other words, according to Spiro, empathy involves "passion." The role of empathy is to restore this passion that equanimity and its associated technology displaces in favor of emotionally detached concern. "Computer tomographic scans offer no compassion," observed Spiro, "and magnetic resonance imaging has no human face. Only men and women," he concluded, "are capable of empathy" (1993b, p. 14).

Halpern (2001), in particular, has recently argued for a clinical empathy that is based on an emotional reasoning in which the physician "resonates" with and "imagines" the "how" of the patient's emotional state. There is a cognitive dimension to empathy that allows a person to understand the object of empathy. It is "the power of projecting one's personality into the object of contemplation, and so fully understanding it" (Selzer, 1993, p. ix).[3]

According to Halpern, there are four facets to emotional reasoning. The first is "associational linking," in which "the empathetic physician relies on her capacity to associate in order to link to the patient's images and ideas" (Halpern, 2001, p. 41). The next facet of emotional reasoning is "gut feelings," which are the spontaneous emotions that are pre-cognitive in nature. These feelings serve a heuristic not a confirmatory function in medical knowledge and practice. The third facet is "emotional inertia." Rather than being spontaneous these emotions have a history behind them and serve to help the physician imagine a patient's emotional state. The final facet is "moods and temperament," which provide the background or context in which the physician and patient operate in his or her world. Importantly, this emotional reasoning is "pre-logical" in that it serves a heuristic or strategic function by guiding a physician in obtaining important affective information about a patient, which has a significant impact on a patient's illness experience.

Based on this notion of emotional reasoning, Halpern (2001) proposes an alternative conception of empathy to that of its chastened or masculinized form or affective melting. This type of empathy allows the physician to resonate with the patient's emotional state. "Resonance," Halpern explains, "is extremely helpful for empathy because it provides a coordinated emotional context between speaker and listener" (2001, p. 92). Such a context allows a physician to imagine how or why a patient feels the way he or she does about being ill.

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[3] This definition is similar to that found in the Oxford English Dictionary, which is similar to Lipps' definition (Halpern, 2001, p. 75).

Halpern provides a case illustration of an older male patient who was a successful business person and a family patriarch. The patient was suffering from a neurological disease, which left him a quadriplegic and dependent upon a respirator. In Halpern's first clinical encounter with the patient, she approached him with sympathy and pity. The patient did not respond. In an attempt to resonant with the patient and to imagine what the disease meant to the patient, she suddenly realized the anger, fear, and shame the patient must be experiencing. She then approached the patient from this perspective and found him responsive. "In empathy," concludes Halpern, "emotional resonance can set the tone, but imagination work must be done to unify the details and nuances of the patient's life into an integrated affective experience" (2001, p. 88).[4]

Empathy then supplements or complements the clinical objective knowledge to yield a complete or holistic picture of the patient: "Empathic communication enables patients to talk about stigmatized issues that relate to their health that might otherwise never be disclosed, thus leading to a fuller understanding of patients' illness experiences, health habits, psychological needs, and social situations" (Halpern, 2001, p. 94).

As noted earlier, More expounds upon the masculinization of empathy during the twentieth century, to fill the gap left by the feminization of sympathy. "Our task," she claims, "is to reclaim the validity of empathy as intersubjective knowledge without simultaneously marginalizing it" (More, 1994, p. 33). To that end she proposes a "relational" model for empathy, especially in terms of hermeneutic practice. This practice involves a "reflexive interpretation" in which there is "a constant oscillation back and forth between observation of the patient, and of ourselves, allying imagination, emotion, memory and cognition in the service of informed understanding" (More, 1996, pp. 244–245). Through this process the physician comes to a "relational knowledge" that is empathic.

"The empathic physician," according to More, "is neither objective nor subjective, neither detached nor identified, but dialogically linked to the patient in a continuing cycle of reflexive interpretation that integrates the objective and subjective" (1996, p. 245). The consequence is that a physician is not distant from a patient but present empathically. For many humanistic or humane practitioners and for a number of feminists, the relational dimensions of genuine and authentic empathy are advanced by modification of traditional notions of caring and by a contemporary ethic of care.

14.2.2 Caring

The notion of caring has deep roots within western thought, especially as it relates to medicine and general wellbeing. Reich (2004b) has identified two main trunks to its roots. The first is the "Cura" myth of Greco-Roman origin. Briefly, the deity

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[4] Halpern (2001) acknowledges that the accuracy of empathy depends upon an open ended dialogue between a physician and patient.

Cura fashioned human beings from Earth and solicited the deity Jupiter to enliven them. Because Cura and Jupiter could not agree on the appropriate name for these beings, Saturn intervened. Upon death the human spirit returns to Jupiter, while the human body to the Earth. While alive, however, humans are the under the solicitous care of Cura. “The lifelong care of the human that would be undertaken by Cura,” according to Reich, “entails both an earthly, bodily element that is pulled down to the ground (worry) and a spirit-element that strives upward to the divine” (2004b, p. 350).

The Cura myth reflects the tension that exists in the traditional meanings of care: care as worry or burden and care as concern over or devotion to the welfare of another. The main lesson of the myth is that the very heart of what it means to be human is to care and to be cared for. “Indeed,” notes Reich, “the Myth of Care presents an allegorical image of human kind in which the most notable characteristic of the origins, life, and destiny of humans is that they are cared for” (2004b, p. 350).

The second trunk of the root of caring within western thought is the “care of souls” tradition. According to Reich (2004b), the notion of soul has a variety of meanings in the tradition. Predominantly, however, it refers not simply to any one dimension like the spiritual but to the entire human person or to “the essence of human personality. It is related to the human body, but it is not a mere expression or function of bodily life. It is capable of vast ranges of experience and susceptible to disorder and anguish” (McNeill, 1951, p. vii). The notion of caring is also multidimensional and complex: “The word *care* in the care of souls refers both to the tasks involved in the care of a person or group and to the inner experience of solicitude or carefulness concerning the object of one’s care” (Reich, 2004b, p. 351).

There are then two orientations in the “care of souls” tradition. The first is inward and is concerned about caring for one’s individual soul. The second is towards other souls, especially their suffering and relief. The care of souls pertains to those therapeutic interventions that lead to or promote healing and wholeness. “Man is a seeker of health,” according to John McNeill, “but not health of the body alone. Health of the body may be contributory to,” he added, “but it does not guarantee, health of personality…The health that is ultimately sought is not something to be secured by material means alone; it is the well-being of the soul” (1951, p. vii).

Through the centuries, caring has been a critical element in medical practice. Care and cure were often on opposite sides of the same clinical coin. “Nominally,” according to Joel Howell, “health care providers have always been charged with caring for those to whom they minister. For such providers, caring has at times been part of a larger set of professional responsibilities” (2001, p. 77). Often in medical history, caring was all that was available for physicians. Medical knowledge and practice prior to the nineteenth century promoted caring relationships between patients and physicians: “Each person was unique, each person’s temperament would play a key role not only in making the diagnosis but also in guiding the hand of the physician in recommending appropriate therapy” (Howell, 2001, p. 83).

Although knowing and caring for the patient originally went hand in hand, during the latter part of the nineteenth and the early part of the twentieth centuries theories of disease causation and medical technology began to equip a physician with more than a caring touch or attitude. Caring became equated with curing, such that the traditional notion of caring was eclipsed by the miraculous cures of scientific medicine. Old fashion caring was now obsolete and eclipsed by scientific curing.

Francis Peabody responded to this trend in the 1927 Gay lecture at Harvard Medical School, claiming that the secret of caring for a patient is to care for a patient. Such caring, according to Peabody, is two dimensional. The first is a technical dimension in that the physician must know the latest scientific advances and techniques applicable for diagnosis and therapy. The second is a humanistic or humane dimension. The physician must attend to the emotional and personal needs or concerns of the patient. “The treatment of a disease may be entirely impersonal;” however for Peabody, “the care of the patient must be completely personal” (1984, p. 814). That humane dimension involves attention to the whole person rather than simply to the patient’s diseased part.

“What is spoken as a ‘clinical picture’ is not just a photograph of a man sick in bed;” according to Peabody, “it is an impressionistic painting of the patient surrounded by his home, his work, his relations, his friends, his joys, sorrows, hopes and fears” (1984, p. 814).[5] A critical element of that impressionistic picture is the emotional state of the patient. Illness produces considerable angst for the patient and must be attended to in order to heal the whole person. Moreover, for about half of patients Peabody and his colleagues treated there was no organic basis for their disease but only an emotional or a psychological basis. In a final section to his paper—“Importance of personal relationship”—Peabody concluded that “the physician who attempts to take care of a patient while he neglects [the patient’s emotional life] is as unscientific as the investigator who neglects to control all the conditions that may affect his experiment…for the secret of the care of the patient is in caring for the patient” (1984, p. 818).

Peabody’s influence was considerable but was not wholly appreciated until another generation arose who witnessed the inhumane effects of scientific medicine that resulted in today’s quality-of-care crisis. For example, Menninger drew upon Peabody’s charge to care for the patient as a supplement for the detached concern of technical medicine, by including the emotional condition of the patient: “caring implies more than perfunctory concern. It implies a broader concern for the whole patient, rather than just the patient’s disease” (1975, p. 836).[6]

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[5] The clinical picture Peabody painted was one of distress and worry on the patient’s part (care), which requires the physician’s sympathetic hand (care): “Here is a worried, lonely, suffering man, and if you begin by approaching him with sympathy, tact, and consideration, you get confidence and he becomes your patient” (1984, p. 817).

[6] Menninger (1975) acknowledges that every illness has an emotional component that is important for the patient’s overall quality of life and that genuine and authentic caring is required for the patient’s complete healing.

Cassell, in particular, has made caring for the patient’s suffering one of the chief goals—if not the chief goal—of medicine: “Everything the doctor sees of that person is directly relevant to his or her care of that person—and there is much to be seen that can be seen by those who care. What Francis Peabody said so many years ago as a moral precept for physicians finally becomes a fundamental necessity of medicine: ‘The secret of the care of the patient is caring for the patient’ ” (1991, p. 155). In sum, Peabody’s approach to care was best articulated accordingly: “This sort of care requires attentiveness and alertness to what kind of person the patient is; sympathy for the patient’s total situation; friendliness that elicits trust; and a consideration expressed in ‘little incidental’ actions that assure the patient’s confidence” (Reich, 2004a, p. 364).

Gary Benfield (1979) identified two types of caring in medical practice, especially with relationship to critical-care patients. The first is disease-oriented care, which focuses on the care of the patient’s diseased part. This type of care is based on a philosophy in which “ ‘life’ is all that matters” (Benfield, 1979, p. 509). Death is seen as the enemy and is to be avoided at all costs. Care is wrapped up with technical competence, such that “some physicians may feel that they are trained to treat, to cure at all costs, rather than practice a more humanitarian approach to the art of healing” (Benfield, 1979, p. 509). In contrast, a person-oriented care and its humanitarian approach concentrate on “the needs of the individual patient” (Benfield, 1979, p. 508). The basis of this care is a philosophy of the “quality of life.”

Benfield contrasted the two types of care in several clinical case histories. Disease-oriented care is illustrated with the case of a middle aged male who was comatose after an automobile accident. The physician did not communicate effectively either with the family or the nursing staff concerning the patient’s prognosis, other than it is not good. Person-oriented care is illustrated with a case in which the parents of a dying infant were informed of the infant’s status and were present at the infant’s death. Benfield identified five factors that hinder person-oriented care: lack of cooperation among the healthcare team, paucity of time, nurses as technicians who take care of machinery, lack of training in caring, and poor communication.

Finally, caring is a general theme and goal of medicine that includes a variety of responses to human illness and the helplessness associated with it. “Caring,” according to Leighton Cluff and Robert Binstock, “comprises a wide range of responses to human vulnerability, frailty, pain, and suffering. Many words can be used to describe its elements—compassion, comfort, empathy, sympathy, kindness, tenderness, listening, support, and being there” (2001, p. 1). For Daniel Callahan, caring is a particular type of vulnerability, especially in terms sickness and illness. “Caring is needed,” Callahan claims, “in order that we can help each other bear the assaults upon order and rationality that disease brings, destroying, or threatening to destroy, the orderly world of customary good health, so invisible when we have it, so wrenching and all-consuming when it is absent” (2001, p. 14).

Callahan divided the need for caring into two levels. The first is a general need for caring, which is “almost always needed by patients, whatever their condition and whatever the situation of the caregiver" (Callahan, 2001, p. 20). There are four sublevels to general caring, in which cognitive needs, affective needs, value of life needs, and relational needs are met. The second level is particular caring, which is a "critical mode of caring that works to understand this patient and this time in this circumstance, seeking to find what is unique about the patient and his or her needs" (Callahan, 2001, p. 20).

14.2.3 Ethic of Care

Contemporary ethic of care began with the publication, in the early 1980s, of Carol Gilligan's seminal work, *In a Different Voice* (Jecker and Reich, 2004; Little, 1998; Rudnick, 2001). In it, Gilligan (1982) challenged Lawrence Kohlberg's theory on moral reasoning and development. Kohlberg, who was Gilligan's doctoral mentor, claimed that moral reasoning and development depend upon learning how to use moral principles like justice and rights appropriately. Gilligan, however, alleged that Kohlberg's theory does not represent women's moral reasoning and development since he used exclusively males in his study. She tested female subjects and found a significant difference in the way women reason and develop morally.

Instead for relying upon principles and hierarchical relationships, Gilligan reported that her female subjects are more concerned about the context of a moral dilemma and are more willing to take into consideration the other's best interest, as well as their own. "The ideal of care," according to Gilligan, "is thus an activity of relationship, of seeing and responding to need, taking care of the world by sustaining the web of connection so that no one is left alone" (1982, p. 62). She referred to this moral reasoning as the ethic of care in contrast to an ethic of justice.

Gilligan's work has had a major impact on ethics, especially the development of feminine ethics (Jecker and Reich, 2004). For example, Nel Noddings (1984) contrasted feminine ethics, based on caring and relationships, with masculine ethics based on logic and detachment, and developed a notion of an ethic of care from the general natural caring. The essential ingredient in an ethic of care as compared to a masculine ethic of justice is the natural ethical commitment or duty to act. "Caring," according to Noddings, "requires me to respond to the initial [natural] impulse with an act of commitment: I commit myself either to overt action on behalf of the cared-for…or I commit myself to thinking about what I must do" (1984, p. 81).

Noddings identified two chief requirements for an ethic of care: engrossment and motivational displacement. "Caring," for Noddings, "involves stepping out of one's own personal frame of reference into the other's. When we care, we consider the other's point of view, his objective needs, and what he expects of us. Our attention, our mental engrossment is on the cared-for, not on ourselves. Our reasons for acting [motivational displacement or shift], then, have to do both with the other's wants and desires and with the objective elements of his problematic situation" (1984, p. 24). Caring, then, is based on an ethical ideal of oneself as a good person, especially in relation to others and to their need for care. But Noddings' ethic of care is not duty bound in a dour manner but is girded by the joy caring brings not only to the cared-for but also to the one caring.

Rita Manning (1998) identified five features of an ethic of care. The first is moral attention, which refers to focusing on the various relevant (and at times apparently non-relevant) details that make up a moral or ethical situation. The next is sympathetic understanding. "When I sympathetically understand the situation," according to Manning, "I am open to sympathizing and even identifying with the person in the situation. I try to be aware of what the others in the situation would want me to do, what would most likely be in their best interests and how they would like me to carry out their wishes and interests" (1998, p. 98). The third feature is relationship awareness, which pertains to the relational network that connects people to one another. An important factor in relationships is mutual trust. The final two features are accommodation and response to needs. Physicians in particular, for example, must be willing to accommodate to a patient's needs and to respond to them concretely.

Gilligan's ethic of care came under wide scrutiny and criticism, especially from those defending Kohlberg (Jecker and Reich, 2004; Larrabee, 1993). For example, Iddo Landau (1996) argued that an ethic of justice and an ethic of care are not the result of gender but of socio-economic factors. He claimed that Gilligan did not control for socio-economic factors in her studies. When such factors are controlled for, however, gender is not the determining factor but rather socio-economic ones.[7] Moreover, he concluded that there are ample ethical theories that already combine justice and care ethics, such as Rawl's theory of justice.

In Gilligan's defense, Susan Mendus (1996) argued that Gilligan is calling for equal footing for an ethic of care *vis-à-vis* an ethic of justice and that the ontological basis of a care ethic is not exclusively gender but also equality and violence. Indeed, Gilligan did note in the Introduction to her book: "The different voice I describe here is characterized not by gender but theme. Its association with women is an empirical observation, and it is primarily through women's voices that I trace its development. But this association," she warned, "is not absolute, and the contrasts between male and female voices are presented here to highlight a distinction rather than to present a generalization about either sex" (1982, p. 2). Moreover, Mendus claimed that Rawl's theory of justice marginalizes care and that Gilligan wants to make it an equal partner with justice for a comprehensive ethic.

Finally, some feminists have been particularly critical of feminine ethics or ethic of care (Jecker and Reich, 2004). Rosemarie Tong, for example, claimed that Noddings' "ethics is more feminine than feminist" (1998, p. 148). Tong's complaint is that Noddings is ambiguous about whether men are as caring as women

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[7] Landau acknowledged that "Gilligan, with Jane Attanucci, seems to accept that the determining factors for preferring the use of care or justice ethics are social-economical. But Attanucci and Gilligan," he opined, "claim that gender categories are still significant, since women tend to earn less than men, to be less educated than men, etc." (1996, pp. 56–57).

or women are more caring than men. She is concerned that this ambiguity may lead to a "moral trap" for women, in which they may become more indentured to men than they already are.

Along a similar line, Hilde Nelson also criticized Noddings' notion of caring as being too unidirectional in that it leads to a "slave-caring" paradigm, since it "teaches those who are cared for to receive without giving" (1992, p. 10). The danger is that the caring person is absorbed or eclipsed by the cared for. Nodding objected, claiming that her notion of caring is not individualistic but relational: "When I maintain my capacity to care, I maintain my *self* in the deepest sense; I maintain my capacity to participate in caring relations" (1992, p. 16). Caring then is mutual, i.e. a two-way rather than a one-way street.

14.3 Summary

Instead of a physician being rationally concerned in an emotionally detached manner for a patient, as advocated by proponents of the biomedical model, a humanistic or humane practitioner cares both emotionally and rationally for the health of a patient *qua* person. "Humanistic medicine," according to Little, "seems to mean a medicine that is rooted in a concern for fellow humans, for their emotions, their suffering, their peace of mind" (2002, p. 319). Whereas the biomedical model brackets the emotions of both the physicians and the patient—that leads to the current quality-of-care crisis—humanistic models embrace them as important components of an ethical structure that composes medical practice—that leads to resolving the crisis. Emotions are incorporated into the care a physician exhibits for a patient's wellbeing. "Competency in the basic sciences provides the tools for care," claims Jeffrey Botkin, "but it cannot be synonymous with care" (1992, p. 276).

Humanistic or humane medicine then does not abandon the scientific cure; rather, it strives to obtain that cure within a caring ethos. "Without very much reflection," observes Golub, "*curing* replaced *caring* as the dominant ideology of this new technology-driven medicine. We are slowly realizing that most people want both" (1997, p. 215). Patients expect the physician to cure not only the diseased body but also to heal the sick person: "most patients believe that doctors should do more than simply mechanically intervene in the disease. Rather, they expect the doctor to help them find and remedy the factors that led to the illness, and assist them in returning to their best possible function" (Cassell, 1991, p. 111).

Within an ethos of care, a physician is no longer the locus of supreme authority and power in curing patients but a first-among-equals co-participant with them. The physician then recognizes that the patient's body/mind often cures itself and that the role of both the physician and the patient is to assist in that process and not to hinder it. The patient-physician relationship is one of mutual respect, for the role and contribution of each other in the curing process. And it is to the various models of the patient-physician relationship that we now turn.

Chapter 15
Patient-Physician Relationships

Even though medicine is a social enterprise and is influenced by larger social (political, economic, cultural, and religious) values and goals, its central relationship is narrowly defined in terms of the patient-physician relationship. “The encounter between patient and physician,” according to Earl Shelp, “may be characterized as the focus of medicine” (1983, p. vii). It is this relationship that is one of the most important elements in defining the very nature of medicine itself, since medicine is therapeutic at its core.

In this chapter, defining the nature of medicine *per se* is not the focus—that is reserved for the concluding chapter—but rather the focus is on the various types of models proposed to account for the patient-physician or therapeutic relationship. The number of models seems endless and they range from the classic authoritarian models such as paternalism to the contemporary partnership models. Indeed, Danner Clouser (1983) bemoans the plethora of models but acknowledges that many more can be invented, such as the “bus driver” model or “pin-ball machine” model.

Given the sheer number of patient-physician models, Clouser raises an important, if not a skeptical, question concerning them: “why bother?” (1983, p. 94). His concern is that the models do not really help to determine or define the moral relationship between the patient and the physician. Rather than models, he prefers a list of actions that would be immoral in terms of patient-physician interactions. “The physician-patient relationship would be better served, if,” according to Clouser, “instead of delineating models with all their complicated and ambiguous interrelationships, presuppositions and beliefs, we simply listed what we morally ought not to do” (1983, p. 95).

In the final analysis, Clouser fears that models do not provide the foundation needed to determine or justify the morality of actions as do normative ethical theories. Behind this concern is also a concern that models do not or cannot motivate morality. Rather, all the various models seem to be on equal footing in terms of motivating one to do what is morally right. Consequently, instead of identifying one model by which to define the patient-physician relationship, “Why not let many styles flourish? Let patients and physicians establish the kinds of relationships which suit them. Let them find,” he concluded, “each other and develop together” (Clouser, 1983, p. 96).

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Robert Veatch (1983) in a response to Clouser admits that Clouser is right about the importance of normative ethics for determining or justifying an action's moral nature. However, Veatch defends the use of models in terms of metaethics: "Unless one deals with the basics of metaethics—of the meaning and justification of moral norms and the role of ethical principles in various moral choices such as professional practices—the normative ethics is likely to be muddled" (1983, p. 106).

Models allow for more imaginative analysis of the fundamental issues facing patient-physician interactions. Indeed, how one models those interactions has profound consequences not only on the ethical dimensions of medical practice but also on the outcome of that practice. For example, "It makes a great deal of difference whether you look at [the patient-physician relationship] as a healing relationship… as a contract between two persons who are on equal footing, or as a commercial transaction" (Pellegrino, 2006, p. 69). Part of the outcome of medical practice depends upon the communication between the patient and physician. Finally, "the way the doctor-patient relationship is seen can have consequences for the actual content of communication" (Ong et al., 1995, p. 914).

Models are also important for understanding and analyzing the moral character of medicine. "Medicine," according to Pellegrino, "is a moral enterprise…that is to say, it has been conducted in accordance with a definite set of beliefs about what is right and wrong medical behavior" (2006, p. 65). For the patient-physician relationship is at heart a moral relationship, and a proper understanding of it is important for a robust morality in medical practice. Any reconstruction of medical morality depends upon a patient-physician relationship that has healing as its goal and not some other goal such as commercialism or paternalism.

According to some medical commentators, the patient-physician relationship has lost its soul to cultural scientism and medicine has forfeited its moral moorings because it focuses on the physician as scientist (Pellegrino, 2006). Although science is important to medical practice, clinicians are to discharge "medicine's original moral mandate" of treating the person and not simply the disease (Tauber, 1999, p. 98). Indeed, the more authoritarian models for the patient-physician relationship are thought to be a major factor responsible for the current quality-of-care crisis (Annalandale, 1989). Thus, models of the patient-physician relationship are important tools for exploring and redressing the issues surrounding this crisis in modern medicine.

There have been a variety of typologies or classifications proposed to distinguish among the various types of models for the patient-physician relationship. For example, one classification scheme divides the models into autonomy-based or beneficence-based categories (Pellegrino and Thomasma, 1993; Loewy, 1994). The autonomy-based category includes the collegial, commercial, contract, and engineering models. "Autonomy models," for Pellegrino and Thomasma, "are largely instrumental, transactional, and procedural. They need not conform to any external set of norms. The contracting parties create their own 'text' and give it the ethical meaning they choose" (1993, p. 192). The beneficence-based category includes the paternal and priestly models. These models depend upon the ends of the clinical encounter: "In the long term, the end is health; in the shorter term the end is cure, containment, amelioration, or prevention of illness, pain, and disability. The most proximate and most immediate end of this relationship is a technically correct and morally good healing decision for and with a particular patient" (Pellegrino and Thomasma, 1993, p. 193). In this chapter, the various patient-physician relationships are categorized according to the distribution of power between the patient and physician: "Physician-patient interaction is rooted in a power relationship" (Haug and Lavin, 1981, p. 212). Power is necessary for performing actions, affecting change, or accomplishing tasks.

Alvin Toffler identified three sources of power or a "power triad" of "muscle, money, and mind" (1990, pp. 12–13). "Knowledge, violence, and wealth, and the relationships among them," according to Toffler, "define power in society" (1990, p. 16). Felicity Goodyear-Smith and Stephen Buetow (2001) adapt Toffler's notion of power for categorizing patient-physician interactions. For example, medical knowledge is an important component of the power equation in patient-physician interactions, with the physician often holding the upper hand. As they note, these sources of power can also be misused, e.g. in the withholding of medical information by the physician or the patient's personal habits such as alcohol abuse.

Debra Roter (2000) provides a useful grid for patient-physician models based on whether the power possessed by the patient or physician is either high or low. This grid is utilized in this chapter to categorize the various models for patient-physician interactions into three main categories: physician-centered (high physician and low patient power), patient-centered (low physician and high patient power), and mutual (high physician and high patient power).[1]

15.1 Physician-Centered Models

For the physician-centered models, power is located within the role and function of the physician, with the patient remaining largely passive and powerless. In these models, "physicians dominate agenda settings, goals, and decision-making in regard to both information and services; the medical condition is defined in biological terms and the patient's voice is largely absent" (Roter, 2000, p. 7). The physician generally assumes that the patient's values are similar to his or her own, primarily the restoration of physical health. Moreover, the physician labors under the assumption that only he or she is able to make the appropriate decision, given the technical nature of medical knowledge and practice. Finally, these models for the patient-physician relationship are "asymmetrical: The patient is in a dependent, and the physician in a superordinate, position" (Haug and Lavin, 1981, p. 212).

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[1] Roter does recognize a fourth category in which both the patient and physician have low power in the relationship. She calls this a "default" relationship, when "patient and physician expectations are at odds or when the need for change in the relationship cannot be negotiated, the relationship may come to a dysfunctional standstill" (Roter, 2000, p. 7). Another possibility for this relationship is when an outside party has the power, as in the case of HMOs.

There are two predominant models within the physician-centered category, depending on the role of the physician. The first are the authoritarian models, with the physician functioning as a parent or priest. The second are the mechanistic models, with the physician acting as a technician or engineer who has the necessary expertise to fight the disease for the patient.

15.1.1 Authoritarian Models

The authoritarian models are certainly the oldest and best known models of the patient-physician relationship. Of course, the basis of these models is the authority granted by patients to physicians to practice medicine. “Authority,” according to Haug and Lavin, “classically is defined as the *right* to influence and direct behavior, such right having been accepted as valid and legitimate by others in the relationship. In the medical context,” they add, “authority is defined as the patient’s grant of legitimacy to the physician’s exercise of power, on the assumption that it will be benevolent” (1981, p. 212).

Besides the patient directly granting the physician authority, Russell Maulitz (1988) identifies three other sources of the physician’s authority. The first is legal in which the state bestows upon physicians the right to practice their trade, including prescribing pharmaceutical drugs and conducting surgical operations and procedures. The next source of authority is professional, in which the medical profession itself as a qualified and a responsible society regulates its members. The final source is cultural, especially the technological advances made in the biomedical sciences.

15.1.1.1 Paternalistic Model

The paternalistic model is the traditional model of the patient-physician relationship and is the best known of the authoritarian models. It is fashioned after the parent-child relationship, in which the physician takes on the role of parent and the patient the child. “Paternalism,” according to Pellegrino and Thomasma, “centers on the notion of the physician—either by virtue of his or her superior knowledge or by some impediment incidental to the patient’s experience of illness—has better insight into the best interests of the patient than does the patient, or that the physician’s obligations are such that he is impelled to do what is medically good, or even if it is not ‘good’ in terms of the patient’s own value system” (1988, p. 7). The physician, thereby, has the power in the therapeutic relationship to make the decisions and the patient is obligated to trust the physician implicitly and completely. In other words, the hierarchy of the paternalistic relationship is dominance on the physician’s part and submission on the patient’s part.

The patient’s role in the paternalistic model is that of the sick child, with the physician playing the parent’s role—usually that of a father. Parsons and Fox (1952) distinguished two analogies between the parent-child relationship and the patient-physician relationship. The first is between the child and patient. Just as a child is incapable of performing adult daily activities, so is the adult patient because of illness; and just as a child is dependent upon the care of "stronger, more 'adequate' persons," so is the adult patient because of illness. The second analogy is between the parent and physician. "These [parents and physicians]," according to Parsons and Fox, "are the stronger and more adequate persons on whom the child and the sick person, respectively, are made to rely; they are the ones to whom he must turn to have those of his needs fulfilled which he is incapable of meeting through his own resources" (1952, p. 32). Finally, both the child and patient suffer conditions that are "conditionally legitimized social roles," i.e. both are allowed to be childish or sick temporarily but both are obligated to grow up or to be cured.

The motivation of the paternalistic model is beneficence: "In this model, the physician-patient interaction ensures that patients receive the interventions that best promote their health and well-being" (Emanuel and Emanuel, 1992, p. 2221). The obligation of the physician may also involve disciplining the patient, especially the non-compliant patient: "If patients do not live up to their sick-role obligations, if they are not cooperative and compliant, the doctor may withdraw support and legitimization of the patient's sick-role status" (Beisecker and Beisecker, 1993, p. 47). The motivation for the patient is to regain health, by complying completely and passively with the physician's therapeutic prescriptions. The patient is to trust and obey the physician without question; this is true especially for patients engaging in risky lifestyle activities, such as cigarette smoking or promiscuous sex.

Paternalism is defined in a variety of ways, especially in terms of limiting a person's freedom. A general definition, with respect to the parent-child analogy, reads: "The paternalist or parentalist interferes with (or circumvents) the liberty, autonomy, wishes, or judgment of another adult but justifies this behavior on the ground of the latter's benefit. Such interference, in effect, reduces an adult to a child, albeit for the child's own sake" (May, 2000, p. 41). Beauchamp (2004b) identifies two types of definitions for paternalism. The first is a narrow definition, in which a person is coerced to act often against his or her will. Gerald Dworkin provides the best known definition for the narrow type: "the interference with a person's liberty of action justified by reasons referring exclusively to the welfare, good, happiness, needs, interests or values of the person being coerced" (1972, p. 65).

The second type is a broad definition, in which a person's liberty and free action are not necessarily coerced.[2] Gert and Culver (1976, pp. 49–50) provide a comprehensive definition of such paternalistic behavior:

A is acting paternalistically toward *S* if and only if *A*'s behavior (correctly) indicates that *A believes that*:

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[2] Allen Buchanan also provides a broad definition for paternalism based not only on action but also on information: "paternalism is interference with a person's freedom of action or freedom of information, or the deliberate dissemination of misinformation, where the alleged justification of interfering or misinforming is that it is for the good of the person who is interfered with or misinformed" (1978, p. 372). He presents falsifying the diagnosis for patients with cancer as an illustration.

(1) His action is for *S*'s good.
(2) He is qualified to act on *S*'s behalf.
(3) His action involves violating a moral rule (or doing that which will require him to do so) with regard to *S*.
(4) He is justified in acting on *S*'s behalf independently of *S*'s past, present, or immediately forthcoming (free, informed) consent.
(5) *S* believes (perhaps falsely) that he (*S*) generally knows what is for his own good.

Their definition of paternalism covers the acts of paternalism in which the patient is not coerced. They provide the example of a patient who refuses blood transfusion for religious reasons, only to have the attending physician administer a blood transfusion when the patient becomes unconscious. Crucial to their definition is feature (3), which prohibits breaking a moral rule. In their example then the physician, although not coercing the patient, still acts paternalistic because of breaking a moral rule that prohibits deceiving or depriving a person of an opportunity or a freedom. It must also be noted that the physician has also fulfilled other features, especially feature (4).[3]

Besides the narrow and broad definitions, paternalism is also divided into either weak or strong versions. Joel Feinberg introduces these versions "to reconcile somehow our general repugnance for paternalism with the apparent necessity, or at least reasonableness, of some paternalistic regulations" (1971, p. 106). Weak paternalism refers to constraints or limitations on non-autonomous or non-voluntary activity. Childress later defines it in limited or restricted terms: weak paternalism "overrides a person's wishes, choices, and actions for that person's own good because he or she suffers from some defect, encumbrance, or limitations in decision-making or acting" (1982, p. 17). In other words, weak paternalism does not apparently violate a person's autonomy. Strong paternalism does. "Unlike weak paternalism," claims Beauchamp, "strong paternalism does not require any conditions of compromised ability, dysfunctional incompetence, or encumbrance as the basis of intervention" (2004b, p. 1985).

Although weak paternalism is often deemed permissible, especially in emergency cases where life and death decisions must be made when the patient is not able to contribute to the decision making process, strong paternalism is generally considered so severely limited so as to be non-justifiable. For example, Heta Häyry concludes that "there cannot be standard policies requiring violations of patients' autonomy in the name of their own best interest—or, in other words, that there cannot be legitimate medical working procedures which are based on *strong* paternalism" (1991, p. 183). Rather, respect for the patient's autonomy to make choices about his or her health trumps such paternalism. For strong paternalism "violates the architectonic aim of medicine, which is to heal the one who is ill. To violate a person's autonomy is not to heal but to wound" (Pellegrino and Thomasma, 1988, p. 23).

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[3] See Häyry (1991, p. 53), for a critique.

15.1.1.2 Priestly Model

The priestly model for the patient-physician relationship is probably the oldest of the authoritarian models. “Among pre-literature or primitive people,” according to Amundsen and Ferngren, “religion and magic are usually one and the same and medicine is subsumed under them” (1983, p. 5). This close connection between religion and medicine is thought to be due to the fact that disease and illness are mysteries and of supernatural origin, i.e. demons and spirits. The priest or shaman, as the person who understands these mysteries, is responsible for confronting them and thereby providing for the patient’s healing. The patient must trust the priest or shaman, a trust that is based on the patient’s faith: “the patient’s trust is rooted in the larger context of faith and the construction of meaning” (Barnard, 1982, p. 229). Disease, as the mystery-to-be-healed, is often situated in a supernatural structure and the priest or shaman is to provide solace and understanding for the patient. The patient’s responsibility is to believe in the priest’s or shaman’s prayers, sacrifices, incantations, dances, etc.

The authority of the priestly model is based on two sources. The first is the patient’s dependence upon the magical skills of the priest or shaman, who is often responsible not only for the welfare of the members of a community but also of the overall community itself. “One’s [the patient’s] dependence upon him [the priest],” according to Amundsen and Ferngren, “while in a state of specific need (illness, disease, injury), is but an extension of one’s dependence upon him in the much broader spectrum of stability, prosperity, well-being and even survival, both individual and communal” (1983, p. 5). The second source is priestly charisma. James Knight labels it “charismatic authority.” Charisma pertains to the “spiritual power and virtue attributed to a person who is regarded as set apart from the ordinary—set apart by reason of a special relation to that which is considered of ultimate value” (Knight, 1982, p. 100). In other words, charisma is a gift bestowed (generally by a god) upon a person to accomplish a particular task. For the priest, that gift, among others, includes the power to heal.

Although today’s physicians shun the priestly mantle, because of modern secularism, physicians do function in a limited capacity as priests. David Barnard (1985) identified three “ministerial functions” of contemporary physicians. The first pertains to the physician’s service and vocation. Medicine is a calling by the need of another and the physician is to respond in his or her service to that need. The next priestly function, an outcome of the first, is in terms of healing. The service is necessary therapeutic interventions to elicit healing and to sustain that healing until the patient is restored to health and wholeness. The final function is to assist the patient in clarifying his or her values, through “educative guidance.” The physician is to remain loyal to the patient and not to impose his or her value judgments onto the patient.[4]

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[4] Barnard (1985) also distinguished between the pastoral and prophetic roles, the former whose loyalty lies with the community and its members and the latter with the divine. The prophet often chastises, while the pastor consoles. The distinction is not always clear and may require sensitivity to the context. In like manner, the physician must be careful to distinguish between the two roles so as not to abuse the power to coerce another in terms of his or her values.

Barnard (1985) does caution against three possible idolatries, in which ultimate value is subscribed to something that is not ultimate in worth, including the idolatries of technology, the marketplace, and the nation-sate. Recovering these priestly functions and avoiding the idolatries are critical for "the renewal and nurture of the affective, value-conscious dimensions of professional life in a technological and bureaucratic culture" (Barnard, 1985, p. 285).

According to Veatch, the main moral principle of the priestly model is: "Benefit and do no harm to the patient" (1972, p. 6). The source of this principle is the patient's "silent plea: 'Don't let me die' " (Knight, 1982, p. 101). However, the basis of this principle belies paternalism, with the physician playing the role of "Father": "It takes the locus of decision making away from the patient and places it in the hands of the professional. In doing so, it destroys or at least minimizes the other moral themes essential to a more balanced ethical system" (Veatch, 1972, p. 6). These other principles include "providing individual freedom," "preserving individual dignity," "truth-telling and promise-keeping," and "maintain and restoring justice" (Veatch, 1972, p. 6). Clouser also criticizes the "do not harm principle" in terms of the ambiguous use of harm from an authoritarian or paternalistic stance: "I would think that a person is harmed when—among other things—he is deceived, deprived of freedom, and deprived of opportunity" (Clouser, 1983, p. 92).

15.1.2 Mechanistic Models

The mechanistic models are an outgrowth of the scientific revolution, which reached its zenith for application to medicine in the mid twentieth century. For many, medicine became a science or, at least, an applied science. Because this model stresses the mechanistic nature of the patient's body and the scientific problem-solving aspect of medical practice, diagnosis and treatment of a patient's disease represent puzzles that concern the physician-scientist *qua* mechanic, technician, or engineer. According to Michael Bayles: "The occupation of auto mechanic has arisen in society almost simultaneously with the progress of medicine … Despite one's initial aversion to this analogy [physician as mechanic], it soon seems a very strong and informative one for the concepts of health and illness as well as the ethical relations involved" (1981, p. 665). The physician, then, is a body mechanic and the patient is the body machine.

Interestingly, Bayles situates the analogy between auto mechanic and physician in a fiduciary relationship, rather than in a paternalistic, contractual, or agency relationship. In a fiduciary relationship, the mechanic or physician is obligated to use the expert and technical knowledge to the benefit of the customer or patient. "Physicians, like automobile mechanics," claims Bayles, "have obligations to others that do not arise from the relationship. These obligations depend on the role of the profession or occupation in society" (1981, p. 670). That role for the physician is an expert, with an expertise in treating disease. In other words, the physician's obligation stems from expert, technical knowledge. It is also this expertise that grounds the trust of the fiduciary relationship. The patient must trust the physician, because the physician is an expert. The trust is not dissimilar to that of the child in the paternalistic relationship except that the physician is a competent mechanic.

As a mechanic, the physician’s “clinical gaze” is frequently myopic—focused only on the diseased body part, to the exclusion of the patient’s overall experience of illness and suffering. In addition, “the ‘medical gaze’ is directed to the inside of the body,” so that the “physician in a sense renders the outer appearance of the physical object-body transparent” (Toombs, 1993, pp. 78–79). Moreover, the gaze of the machines used to diagnose and treat the patient’s diseased body often accompanies the physician’s gaze.

Diagnosis and treatment of patients for the mechanical model is generally from the outside in (Davis-Floyd and St. John, 1998). The role of the physician *qua* mechanic is to intercede on the patient’s behalf and has its origins in the European barber-surgeons, who “held that the job of the healer was to intervene in the disease process” (Davis-Floyd and St. John, 1998, p. 26). Although the outside-in approach empowers the physician, it “renders invisible the personality and the experiences of the patient who must live and perhaps dies with these diseases” (Davis-Floyd and St. John, 1998, p. 28).

Physician training in technical protocols is the hallmark of the mechanical model: “Physicians quickly learn to abstract their interest in a medical case from the fateful issues that the patient and family face. A case intrigues to the degree that it challenges technical skill” (May, 2000, p. 94). Moreover, the institutional structure of medicine rewards those areas of medicine that are highly technical. For example, interventionist cardiologists are monetarily remunerated for their services at a staggering level compared to family practitioners. The economic disparity within the practice of medicine not only has an impact on the patient-physician relationship but also on the social structure of medicine itself. Physician assistants and nurse practitioners are filling the void left by physicians who pursue more lucrative specialties in medicine.

The technical model has had a dubious effect on the moral formation of physicians: “A good deal of the moral conditioning of medical school directs itself to detaching the young physician-to-be from the vagaries of ordinary human ties” (May, 2000, pp. 100–101). The outcome of biomedical pedagogy is a physician who only connects minimally, if at all, with a patient’s existential concerns and angst.

Whereas the priestly model is steeped in values, the mechanistic models are not; rather, they are constrained only by the (scientific) facts (Veatch, 1972). These facts are traditionally believed or claimed to be value-free. The physician as an applied scientist then must ignore the patient’s values, in order to make an efficient and a scientifically accurate diagnosis. However, the notion of a value-free medicine and science is not possible, since values are employed daily to make choices about research problems and other important decisions. “The physician who thinks he can just present all the facts and let the patient make the choices,” opines Veatch, “is fooling himself even if it is morally sound and responsible to do this as all the critical points where decisive choices are to be made. Furthermore,” he concludes, “even if the physician logically could eliminate all ethical and other value considerations from his decision-making and even if he could in practice conform to the impossible value-free ideal, it would be morally outrageous for him to do so" (1972, p. 5).

15.2 Patient-Centered Models

"Nothing in medical ethics has changed so dramatically and drastically in the last quarter century," according to Pellegrino and Thomasma, "as the standards of ethical conduct governing the relationship between physicians and patients. In that time, the center of gravity of clinical decision-making has shifted almost completely from the physician to the patient" (1993, p. 54). The overthrow of physician-centered modes was the result of the advocacy for patient autonomy. In the patient-centered models, the physician's power within the authoritarian models swung to the patient: "Patients set the goal and agenda of the visit and take solo responsibility for decision-making. Patient demands for information and technical services are accommodated by a cooperating physician. Patient values are defined and fixed by the patient and unexamined by the physician" (Roter, 2000, p. 7).

There are two subcategories for patient-centered models. The first are the legal models, which include the contract and contractarian models, as well the defensive models and Baruch Brody's status model. The second are the business models, which include the commercial and consumerism models. The legal and business models may appear mutual, but against a backdrop of the physician-centered models, these models empower the patient especially in terms of negotiating a contract. The contract ensures that a physician meets the patient's needs or it allows the patient to shop around for a physician who does meet those needs. In this way, the legal and business models are patient-centered.

15.2.1 Legal Models

Besides the principle of autonomy, the legal models are also predicated upon the principle of justice, especially in terms of rights and duties. These models protect the powerless from the powerful, ensuring that the relationships between them conform to community or legal standards. Legal precedent, whether common law or statutory, ensures the protection of a person's right and the performance of another's duties. The ideal outcome is a fair and equitable distribution of goods and services that do not favor one party over another, through deception or bias. For example, contracts provide recourse to compensation when the terms are not meet by one party. They ensure "the legal enforcement of terms on both parties and thus offers each some protection and recourse under the law to make the other accountable under the contract" (May, 2000, p. 125).

Contractual models generally involve negotiations between two parties, in which both parties maximize their particular goods. "When two parties enter into a contract," according to May, “they do so because each one cuts a deal that serves his or her own advantage” (2000, p. 125). The medical or healing contract often involves a patient’s rights and a physician’s duties to respect those rights. “Certain rights, such as the patient’s right to self-determination,” observes Maureen Kelley, “and certain corresponding duties, such as the physician’s duty to disclose all the information needed by the patient to make a fully informed choice, would make up the content of the contractual model” (2004, pp. 524–525).

The contract model in medicine, however, differs from common contracts for other goods and services by empowering the patient, who enjoys the upper hand in negotiating the contract. It also differs from common contracts on a number of other points (Masters, 1975). These differences include, for example, the “interest” of the patient, which is his or her life, as well as the limited knowledge of the patient concerning medical procedures.

Baruch Brody (1983) distinguishes five features of the contractual model in medicine. The first is that both the patient and physician are under no obligation to enter into a medical or healing contract. Brody notes two consequences of this feature: (1) physicians are not obligated to treat patients, sometimes even under emergency situations, and (2) patients need not seek medical treatment. The next feature is that if either party does enter into an agreement, they do so freely and without coercion or deception. The third feature is the heart of the contract, in that the contract is only binding and legal when both parties have agreed to its terms. The next two features are concerned with society’s role in the contract. The fourth feature involves the social assurance that the contractual terms are either performed by both consenting parties or sanctions are levied against the non-performing party. The final feature is that the patient, and not society, reimburses the physician for rendered services.

Critics of the contractual model point out a number of problems with it. The first involves concern over the minimalization of the physician’s services. “The contractualist approach,” warns May, “tends to reduce professional obligation to self-interested minimalism, quid pro quo” (2000, p. 126). In other words, the physician performs only the terms of the contract and is under no obligation to treat unpredicted complications. Related to this criticism is the concern that “the contract model relies too narrowly on rights and permission and overlooks other important goals and duties, such as compassion and trust” (Kelley, 2004, p. 526). Another problem is that the contractual model encourages defensive medicine, especially in terms of the physician avoiding a malpractice suit (May, 2000, p. 131). Contractual terms can at times be ambiguous and the physician may feel compelled to over perform services for fear of reprisal, if harm or damage occurs to the patient.

According to Howard Brody (1987), a contractarian model based on John Rawl’s “original position” could address many of these criticisms, especially the ethical minimalism critique. Rawl’s “original position” states that a group of people are born into a society without prior knowledge of their social position (“veil of ignorance”). Under this condition, goods and services are distributed equally. Brody adapts for the patient-physician relationship Rawl’s position with respect to three features: description of parties, knowledge available to them, and knowledge concealed from them. For example, in terms of the description of the parties each would be "motivated to choose basic moral principles to govern the patient-physician relationship," while the knowledge available to them would be the "general nature of medicine and health care" and the knowledge concealed from them would be "one's state of health" (Brody, 1987, p. 213). Based on this modified Rawlsian "original position," the parties would not promote a minimalist position since they would certainly agree to maximize their medical goods and services equitably across social strata.

In response to the contractual model and its problems, Baruch Brody (1983) proposes a model based not on common law but on statutory Judaic law. Again, there are five features of the "status" model. The first is that both the patient and physician are, under certain conditions, obligated to enter into a medical or healing contract. The next feature is that terms are not set freely by the parties but by an outside party. The third feature is the heart of the status model, in that the relationship is binding even though one party may not consent to the terms. Again, the next two features concerns society's role in the contract. The fourth feature involves the social assurance that each person enters into the relationship and fulfills his or her respective obligations. The final feature is that society rather than the patient reimburses the physician for services rendered.

The difference between the common law contractual model and Brody's statutory status model is that the former is based on autonomy while the latter on responsibility. "From the point of view of physicians," claims Brody, "this [status] model emphasizes their [physicians'] responsibility to treat patients in an appropriate fashion for a reasonable fee. From the point of view of patients," he adds, "this model emphasizes their responsibility to seek the best medical treatment required to maintain the highest level of health possible" (1983, p. 128).

15.2.2 Business Models

Modern medicine is big business. In the United States, the healthcare industry represents a significant portion of the Gross National Product. And its economic impact and commercialization are going to continue to escalate in the future (Heffler et al., 2005). Today, hospitals, physicians, clinics, and pharmaceutical companies advertise their goods and services in the media, to attract and educate patients.

Business models of medicine have certainly been a part of medicine's history, but their impact on the patient-physician relationship is a recent phenomenon that began with the consumerism movement in the 1960s. With the passage of a consumer bill of rights in the United States, consumers are now protected from and empowered against victimization by big business. "During the decade of the sixties," according to Leo Reeder, "a new concept came into prominence in this country. This was the concept of the person as a *consumer* rather than as a patient" (1972, p. 408). While the patient became the buyer of healthcare goods and services, the physician became the provider or seller.

With the consumer model of the patient-physician relationship in which the patient becomes the buyer and the physician seller, the switch in labels also reflects a shift in power. "In simple terms," claim Haug and Lavin, "consumerism in medicine means challenging the physician's ability to make unilateral decisions—demanding a share in reaching closure on diagnosis and working out treatment plans" (1983, pp. 16–17). If the patient believes that the physician is not providing the best service or goods or that patient feels his or her voice is not being heard, then the patient is free to shop around for another physician with whom he or she is satisfied. With the business model, "consumerist patients should be expected to engage in 'doctor shopping' in order to find a physician who best meets their health, economic, and personal needs" (Beisecker and Beisecker, 1993, p. 52). Of course, the patient as buyer of healthcare goods and services must be wary of the physician. Instead of trust that under girds most models, business models operate on distrust. The guiding principle for the patient-consumer is *caveat emptor*—buyer beware (Reeder, 1972).

Whereas autonomous rights and duties are the foundation for the legal models of the patient-physician relationship and are also important for the business models, the market is *the* foundation for the business models. "In the consumer model," according to Pellegrino and Thomasma, "health care is view[ed] as a commodity or service, like any other commodity, to be purchased in the marketplace on the consumer's terms, that is, in terms of his or her personal assessment of alternative models of treatment, their cost, benefits, and risks" (1993, p. 56).

The assumption behind the business models is a free market in which all parties come to the bargaining table as equals. Importantly, the free market guarantees a fair exchange between parties. "Participants are assumed to be bargaining equals," claims Loewy, "in that the consumers know what they want and buy it from the producer offering the best deal—the implication being that this state of affairs is most likely to serve the best interests of all parties concerned and, for this reason, is the most apt to be just and equitable" (1994, p. 28).

The main feature of the business models is an exchange relationship. "The consumerist doctor-patient relationship," according to Beisecker and Beisecker, "is conceptualized as an exchange relationship from which both parties expect to receive something of value and in which economic concerns are central" (1993, p. 50). The motivation for the patient is to find the best healthcare possible, at the best price. The motivation for the physician can be either monetary or prestige (Beisecker and Beisecker, 1993). For example, the crisis of primary healthcare providers is based on the economic disparity with specialists, such as interventionist cardiologists. For Lois Pratt, the business models are founded "on an exchange between two problem-solving participants working together in an egalitarian relationship" (Haug and Lavin, 1983, p. 26). The patient as consumer is obligated to manage his or her healthcare through the expert input from healthcare providers. Ultimately, the patient as consumer is responsible for demanding and ensuring quality healthcare.

There are a number of criticisms of the business models. The assumption that the two parties are equal is at best questionable. Certainly the patient is knowledgeable about the personal dimensions of his or her ailment but it is highly unlikely that the same patient, especially from lower socio-economic classes, is sufficiently knowledgeable about the technicalities of contemporary medicine in order to shop effectively for the best medical care.

Another problem is the competitive nature of the business models, which often brings out the worst in human nature. “In the heat of marketplace competition,” warns Loewy, “trust, commitment, and loyalty can actually become dysfunctional as regulative ideals; cynicism, strategic alliance, and shrewd bargaining become more valued attitudes of the day” (1994, p. 29). Patients, especially with debilitating diseases, may not fair well under the business models. As May cautions, “the crises under which many patients press for medical services do not always provide them with the leisure or calm required for discretionary judgment. Thus,” he concludes, “normal marketplace controls will never wholly protect the consumer in dealing with the physician” (2000, p. 132).

15.3 Mutual Models

Whereas the power of the physician-centered and patient-centered models is located with the physician and patient, respectively, the power associated with the mutual models is equitably distributed between the patient and physician in their interactions. “Inasmuch as power in the relationship is balanced,” according to Roter, “the goals, agenda and decisions related to the visit are the result of negotiation between partners; both the patient and the physician become part of a joint adventure. The medical dialogue,” she argues, “is the vehicle through which patient values are explicitly articulated and explored. Throughout this process the physician acts as a counselor or advisor” (2000, p. 7). While the patient-centered models are based on the principle of patient autonomy, the mutual models are based on the principle of informed consent (Katz, 2002). Informed consent, a product of the 1970s, is instrumental in empowering the patient with the information needed to participate in the decision making process.

There are a variety of mutual models, with the predominate being the partnership models. Another well known mutual model is May’s covenant model and its associated role of the physician as teacher. The final two models include the friendship model, in which the patient and physician are intimate with one another in terms of desires and fears, and Kathryn Montgomery’s neighbor model, which she proposes to curb the intimacy of the friendship model.

15.3.1 Partnership Models

In 1982, the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research published its report, *Making Health Care Decisions*, in which the committee members examined the impact of the principle or doctrine of informed consent on the patient-physician relationship. The main question the members of the commission addressed is: “how can a fuller, shared understanding by patient and professional of their common enterprise be promoted, so that patients can participate, on an informed basis and to the extent that they care to do so, in making decisions about their health care?” (President’s Commission, 1982, p. 31). In answering the question, the members of the commission rejected two predominant patient-physician models: “medical paternalism” and “patient sovereignty.” Rather, they proposed a model that cultivates “a relationship between patients and professional characterized by mutual participation and respect and by shared decision-making” (President’s Commission, 1982, p. 36).

The partnership models are composed of a family of models that have been given a variety of names within the literature. For example, in 1956 Thomas Szasz and Marc Hollender discussed three models for patient-physician relationship. Two of the models are variants of the physician-centered models while the third is the “model of mutual participation.” Szasz and Hollender identified three key features of the model: “the participants (1) have approximately equal power, (2) be mutually interdependent (i.e., need each other), and (3) engage in activity that will be in some ways satisfying to both” (1956, p. 587).

Recently, Emanuel and Emanuel proposed a “deliberative” model of patient-physician interaction in which the patient and physician engage in “moral deliberation, the physician and patient judge the worthiness and importance of the health-related values” (1992, p. 2222). Based on these deliberations the physician and patient make a mutual decision as to how best to proceed in terms of treatment. Loewy (1994) proffered a “consensus” model, in which patient and physician reach a mutual agreement over the best means for proceeding in the face of significant differences. “Its goal,” according to Loewy, “is not to persuade (coerce?) everyone to adopt the same position for the same reasons but to preserve the maximum interests and values possible of each and every particular and unique individual—as opposed to a homogeneous, generalized other—involved in and affected by the resolution of specific, concrete problems” (1994, p. 35).

Besides the engineering and priestly models, Veatch also proposed a collegial model for the patient-physician relationship. According to Veatch, in this model the “physician is the patient’s pal…[with] an equality of dignity and respect, an equality of value contributions” (1972, p. 7). However, he faults this model as naive, since there is no means to regulate such equality. Rather, he then proposed a contractual model.

Veatch’s contractual model is not a legal contract *per se*, but is more like a marriage covenant, although there are “social sanctions” for non-compliance of the terms. “With the contractual model,” according to Veatch, “there is a sharing in which the patient has legitimate grounds for trusting that once the basic value framework for medical decision-making is established on the basis of the patient’s own values, the myriads of minute medical decisions which must be made day in and day out in the care of the patient will be made by the physician within that frame of reference” (1972, p. 7).

Later, Veatch (1981, 1991) expanded the contractual model to a “triple contract” model. This model is composed of a “basic social contract” that specifies the basic ethical principles for members of a society, a "lay-professional contract" that specifies the basic ethical principles for the lay-professional relationship, and a "personal patient-physician contract" that specifies the personal ethical principles of the unique patient and physician.

Based on the "triple contract," Veatch (1991) then developed a "partnership" model for the patient-physician relationship: "the patient-physician relation ought to be one in which both parties are active moral agents articulating their expectations of the interaction, their moral frameworks, and their moral commitments. The result," according to him, "should be a partnership grounded in a complex contractual relation of mutual promising and commitment" (1991, p. 3). His partnership model is a moral contract in which both parties, although not maximizing benefits, do meet substantial needs of each other.

For Veatch (1991), in contrast to the patient-centered models, patients have duties and physicians have rights. The first duty of the patient is to fidelity, in terms of veracity and confidentiality, as well as for paying bills and keeping appointments. The second duty is to justice, in terms of not abusing malpractice and of stepping aside in the face of another patient with greater or more urgent need. The physician's rights parallel the patient's duties: "physicians have a right to expect fidelity of patients to the commitments they make, including keeping appointments, paying bills, and maintaining confidences. They have a right to expect truthful disclosures and to be treated justly" (Veatch, 1991, p. 150). Finally, physicians have the right for patients to respect their autonomy.

Indeed, one on the problems with the patient-centered models is that they "encouraged people to make demands but failed to emphasize reciprocal responsibilities" (Coulter, 1999, p. 719). The partnership models rectify this problem by stressing not only sharing information and decision-making but also sharing responsibilities, especially on the patient's part.

Besides Veatch's duties for the patient, Michael Meyer distinguished three "duties" that are incumbent upon the patient in the partnership models. The first is that the patient must be honest and open about the illness experience and why the patient is seeking healthcare. For example, an important duty is "to give as good a medical history as possible" (Meyer, 1992, p. 550). The next duty is to comply with procedures upon which the patient and physician agree. However, the patient does have the right to forego the agreement if he or she feels is it not meeting the agreed upon healthcare goals and needs. The final duty is "to avoid regarding the health care professional as infallible" (Meyer, 1992, p. 552). The patient has a responsibility to recognize that physicians are limited in terms of their technical abilities.

Finally, empirical studies demonstrate that mutual partnership between patient and physician results in positive benefits for the patient's overall recovery and illness experience. In a review of the literature, Deborah Ballard-Reisch identifies around a half-dozen benefits. The first is that patients who participate in the decision-making process are more likely to accept the decision and to be satisfied with it. Another benefit is that patients are more committed to the decision and are more compliant in terms of engaging it. "Shared decision making," according to Ballard-Reisch, "also leads to increased satisfaction with physician-patient communication" (1990, p. 94).

Studies show that patients are anxious to discuss their health-related problems with a physician and that a major source of concern and dissatisfaction is poor communication between the patient and the physician. Finally, patients who participate in the decision making process are often in better health after therapy in which they share the process with the physician. "Structured, participative decision making," concludes Ballard-Reisch, "offers advantages to both members of the doctor-patient dyad, including higher quality decisions, greater commitment to decisions, increased satisfaction with interaction, and increased compliance with treatment regimens" (1990, p. 94).

15.3.2 Covenant Model

Another mutual model for the patient-physician relationship is the covenant model. William May is the best known champion of this model, which he discussed in his classic book, *The Physician's Covenant*, first published in 1983. May set the tone for his classic in an earlier article, in which he contrasts the covenant model with codes, contracts, and philanthropy. The central question for May was: "is covenant simply another name for a contract in which two parties calculate their own best interests and agree upon some joint project in which both derive roughly equivalent benefits for goods contributed by each?" (1975, p. 33). His initial answer appeared to be yes.

May distinguished three components of a covenant: "(1) an original experience of gift between the soon-to-be covenanted partners; (2) a covenant promise based on this original or anticipated exchange of gifts, labors, or services; and (3) the shaping of subsequent life for each partner by the promissory event" (1975, p. 31). Each of these components is also a component of a contractual relationship. For a contract to be binding, there must be consideration (usually in the form of money) on the part of one of the parties and promises exchanged between freely consenting agents. This bond then guarantees the performance of the promises.

Although a covenant appears to be similar to a contract or at least a variation of it, May (1975) differentiated among several features that distinguish it from a contract. The first is indebtedness. The physician is indebted not simply by consideration but also by several gifts. The first gift is the training the physician receives from the professional community. Many more resources are made available to the medical student than covered by tuition. But the most important gift is that of the patient, who comes to the physician in need. The patient is under no obligation to do so, but given the severity of the need seeks out the physician for relief. Without the patient there is no need for the physician. The relationship begins with the simple act of the patient seeking help and ends with the physician offering help. "A covenantal ethics," for May, "helps acknowledge this full context of need and indebtedness in which professional duties are undertaken and discharged" (1975, p. 33).

The physician's indebtedness also grounds the next component of the covenant model: "fidelity and fidelity to promise" (May, 1975, p. 37). A physician must be faithful to the patient and to the promises made to the patient not simply because of a contractual obligation but because it is the best thing morally. Thomasma locates the source of the morality as a "general benevolence or loving charity" (1994, p. 15). In terms provided by Clouser, May promoted a covenant model because it is more concerned with motivation and a philosophy of life.[5] In other words, a covenant better captures the patient-physician relationship because "the relationship is so complicated, there are so many variables, so many different contexts and situations, that we could never spell out explicitly all that a physician should or should not do" (Clouser, 1983, p. 99).

A covenantal relationship is more fluid in terms of meeting the exigencies that are part of the normal course of patient-physician interactions. "Covenants," according to May, "have a gratuitous, growing edge to them that nourishes rather than limits relationships" (1975, p. 34). Thomasma also makes a similar point: "The covenant model is capable of suggesting a wider range of healthcare commitments to individuals who are sick than can the contract model" (1994, p. 16). This is possible because of cultural and religious values shared by the patient and physician and a richer notion of personhood than simply the notion of autonomy.

The main role of the physician in a covenantal relationship, with respect to the patient, is teacher. "The covenantal image," for May, "…demands that healers teach their patients" (2000, p. 155). Of course with the explosion of knowledge within the biomedical sciences, physicians often struggle to keep up with advances in their own specialties. And yet, patients need to know preciously what they are suffering from and the consequences.

A major function of physician as covenanter is to teach the patient not only about the illness and its consequences but also about alterations in habits and lifestyles, if appropriate, needed to live a healthful life. In other words, physicians must work to assist their patients to transform their lives so as to be healed and to remain healed. "Good teachers," warns May, "do not attempt to transform their students by bending them against their will, or by charming them out of their faculties, or managing them behind their backs. Rather, they help them see their lives and their habits in a new light and thereby aid them in unlocking a freedom to perform in new ways" (2000, p. 161). To achieve that level of life-changing teaching, a physician-teacher must be able to understand the patient-student and the blocks that constrain the patient-student from learning what is needed to be transformed in terms of healing.

In the mid 1990s a group of physicians made a clarion call in a statement published in *JAMA*, for implementing the covenant model in contemporary medicine (Crawshaw et al., 1995). Specifically, these physicians believed that a covenant of trust is at the core of medical practice: "Medicine is, at its center, a moral enterprise grounded in a covenant of trust" (Crawshaw et al., 1995, p. 1553). Jing Jih Chin made a similar claim with respect to the patient-physician relationship and a covenant of trust: "Trust is fundamental to the physician-patient relationship" (2001, p. 580). The reason it is fundamental to medicine, especially for the patient-physician relationship,

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[5] Clouser claims that determining what is moral in the patient-physician relationship "is logically independent of and judged by other criteria than our philosophy of life" (1983, p. 100).

is that it stems from the patient's vulnerability and need for competent and compassionate care on the physician's part. Without trust the patient-physician relationship dissolves into an ineffectual or dysfunctional relationship, with the patient being harmed further.[6]

The covenant of trust has eroded over the last several decades, especially due to medicine's commercialization. "Accepting the 'business' paradigm, especially in a profit-center corporate setting," remarked Christine Cassel in comments on the original *JAMA* statement, "turns the physician away from concern for the patient and toward concern for the bottom line" (1996, p. 605). The *JAMA* covenant statement was endorsed by a number of medical societies (Cassel, 1996). "Only by restoring the element of trust in this ageless patient-physician covenant," according to Chin, "can the soul of the medical profession be restored and preserved regardless of technological and social changes in society" (2001, p. 581).

15.3.3 Friendship Model

The friendship model of the patient-physician relationship has a long tradition in medicine, beginning with the ancient Greeks and Romans, and is second historically only to the priestly model. "In Greco-Roman writings," observes Stephen Post, "friendship came to define the ideal patient-physician relationship, at least according to Plato, who refers to physicians as friends of their patients" (1994, p. 26). In general, friendship or *philia* is the ideal for the ancients in terms of relationships because it promotes freedom, in which both parties enter into a relationship as equals for the mutual good of each other, even though the goods are not identical. For the patient the good is health. For the physician, however, it is the patient's appreciation for restoring the good of health.

As Aristotle (2001) noted in the *Nicomachean Ethics*, friendship involves not simply seeking one's own good in a relationship but the good of a friend. Although the friendship model has a long tradition, there has been relatively little philosophical exposition on it—especially in modern times. A possible reason for such dearth of interest is that "the friendship model is taken for granted as the preferred model and hence requires no further justification or elaboration" (Illingworth, 1988, p. 26).

Although there is no extensive analysis of the friendship model, there is adequate exposition of it within recent literature. For example, Patricia Illingworth defines it best as "a strong personal bond between physician and patient and which emphasizes the physician's qualifications as trustworthy, wise, good-willed, and with unqualified integrity" (1988, p. 24). Other definitions focus on a patient's need to confide his or her deepest concerns to a physician as a friend, or on the need

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[6] For example, William Webb in an editorial cautions that sexual contact between patient and psychiatrist results in "devastating effects on [patients'] lives and their capacity to trust future therapy" (1986, p. 1149).

to motivate the patient in terms of compliance. Pedro Laín Entralgo, a well known advocate of the friendship model, claims that a patient befriends a physician not because of the latter's technical skill but because of "kind and friendly goodwill" (Montgomery, 2006, p. 178).[7]

Based on the various definitions, Illingworth distinguishes two types of friendship models in medicine. The first is where "friendship is prescribed for primarily moral reasons" (Illingworth, 1988, p. 27). The reasons for the morally motivated friendship model include beneficence or patient autonomy. In other words, the physician befriends the patient for the patient's good, i.e. to relieve pain and suffering. In the other type of model, "friendship is required because it will generate patient compliance and satisfaction" (Illingworth, 1988, p. 27). A friendly physician is more likely to elicit patient compliance than an unfriendly one.

Advocates of the friendship model view it as normative, in that all patients should desire to be friends with their physician. This view is problematic, since most patients are looking for a competent physician to treat them rather than for a friend. Illingworth cites Veatch's notion of the "protean personality"—one who compartmentalizes life in non-overlapping categories—to support the view that, although some patients might want the physician as a friend, most probably do not.

The normative claim for the friendship model by its advocates is also problematic in terms of patient autonomy: "To saddle patients with a friendship which they do not desire violates their autonomy because in doing so physicians fail to respect patient claims of self-determination" (Illingworth, 1988, p. 28). In other words, the imposition of a relationship that a patient does not want would oblige conditions through which the patient could be coerced into a decision that he or she might not want—thereby compromising patient autonomy. Rather than desire for friendship, patients truly desire that "physicians behave in a neutral manner that is respectful of patients as self-determining agents" (Illingworth, 1988, p. 34).

In defense of the friendship model, David James (1989) agrees that most patients probably do not desire friendship with their physician; however, he argues that this fact does not vitiate the model's normative element *per se*. Rather, he claims that it is possible to have it without it being prescriptive. "The normative element," according to James, "need not consist of obligations. 'Friendship' points towards and helps to organize important moral goods and ideals which physicians and patients may strive to attain, without specifying rights and duties which must be obeyed" (1989, p. 144).

Post concurs with James, in his defense of the model, and lists several of the goods or advantages of the friendship model: "expanded dialogue, shared uncertainty, better patient education and understanding, better compliance, fewer unwanted malpractice suits, and mutual respect for moral conscience" (1994, p. 25). For James the friendship model is "aspirational" rather than "conscriptural" *vis-à-vis* behavior. "What defenders of a friendship model are trying to talk about is value, not conduct;" claims James, "the Good, not the Right" (1989, p. 144).

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[7] Montgomery provides others examples of the friendship model (2006, pp. 178–180).

Both James and Post also defend the friendship model against Illingworth's charge that it violates the patient's autonomy, in terms of trust. According to Post, friendship depends on trust, especially in terms of the notion of "discerning entrustment," in which decisions are best made in the context of friendship. Such decisions are more conducive to self-determination, than those made in isolation. Friendship provides a cooperative rather than an adversarial environment for patient care, in which patient and physician discuss with mutual respect what is best. Finally, and most importantly, "caring that is associated with compassionate friendship is a significant value" (Post, 1994, p. 28).

Although Montgomery claims that the traditional relationship of the patient and physician in terms of science's detached concern or the "care of strangers" is obviously inadequate, since there is no attachment or bond between the patient and physician so that the patient does not feel cared for, she argues that the friendship model of medicine is equally inadequate. "It directly conflicts with medicine's ideal of openness to all in need," opines Montgomery, "or if it does not, it is impractical; friendship with every patient would be emotionally exhausting, even perilous" (2006, p. 180). Rather, she proposes a "medicine of neighbors."

According to Montgomery, patients want a physician who is both competent and caring and that the neighbor model delivers on both. Rather than the physician as friend, which is too intimate, the physician as neighbor provides a "safe distance" so that the physician can be attentive and respectful but still remain nonjudgmental. "Above all," concludes Montgomery, "the physician as neighbor entails a relation to community that itself is caring. Because," she explains, "it offers both sure footing in intimate human contact and a goal of service" (2006, p. 187). In other words, the neighbor model is a median position between the detachment of the traditional model and the intimacy of the friendship model.

15.4 Summary

The patient-physician relationship has undergone significant changes within the last several decades, from the physician-centered models associated with the biomedical model of medicine to the mutual models espoused by humanistic or humane practitioners. Cassell (1991) has identified several factors involved in that change. An important factor is the association of medicine with science in the biomedical model. The effect is to displace the patient for the disease. According to Cassell, "physicians came to believe that to know the disease and its treatment is to know the illness and the treatment of the ill person" (1991, p. 20). But as he points out, physicians treat patients not diseases.

Another important factor in the change of the patient-physician relationship is technology, which often intervenes between the needs of the patient and the role of the physician. Physicians rely too much on their technology, often to the detriment of their relationship with patients (Cassell, 1991). Probably the most important factor in the changing relationship is the decline of medical paternalism with the enlightenment of the public concerning medical knowledge. Patients became co-participants in their treatment, in that they "frequently believe themselves to be active partners in their care. They want to take part in decisions formerly reserved for the doctor; they demand choice in therapy and have high expectations as to outcome" (Cassell, 1991, p. 25). The result is elevation of patient autonomy as one of the chief values in medicine.

Cassell sets out to reclaim part of the wholeness that typifies the patient-physician relationship, which, besides the professional relationship, also includes the personal, private, economic, social, and other relationships. Importantly, he dismisses the notion that the patient-physician relationship is either a transference or parent-child relationship. At its essence the relationship is a healing one, in that the patient must be more than simply cured: "It has been one of the most basic errors of the modern era of medicine to believe that patients cured of their diseases…are also healed; are whole again" (Cassell, 1991, p. 69).

The role of the physician in a healthful patient-physician relationship is to assist in the patient's healing and the basis of that relationship is the trust a patient places within a physician. The physician must be both competent and caring. "To be effective," according to Cassell, "physicians must be adept at working with patients—taking histories, establishing rapport, achieving compliance with regimens that may be extremely unpleasant, being sensitive to unspoken needs, providing empathetic support, and communicating effectively" (1991, pp. 76–77). The various humanistic modifications of the patient-physician relationship have gone a long way in alleviating the current quality-of-care crisis.

Finally, in stories from his own experience in medicine Tauber provides an in depth glance at the problems associated with the patient-physician relationship. In the first story, he recounts one of his mother's countless asthmatic attacks. Although he was always afraid during these attacks, his mother always reassured him as her "little man." From this story Tauber informs the reader that his medical career began at age four and that his goal in life was "to find a cure for asthma" (1999, p. 71). He continues the story with his introduction to medicine by accompanying his father, a general surgeon, as he visited patients on house calls. What struck Tauber was his father's "commanding authority" and ability to dictate the medical interview. Although Tauber considered his father's practice of medicine "paternalistic," he also witnessed the concern his father had for his patients such as crying over a patient's death. The outcome of these experiences for the young Tauber was the "fun" of practicing medicine, which continued through medical school even given its demanding curriculum.

But during Tauber's medical education, he experienced the frustration associated with the biomedical model's treatment of patients with chronic diseases. The first was as a medical student. His father secured for him a clerkship at the Mayo Clinic. While making rounds with an attending physician with a British accent, Tauber witnessed a woman with pancreatic cancer summarily discharged accordingly:

"My dear lady," intoned Dr. English, "I am sorry to say that you have cancer of the pancreas. There is nothing we can do for you. You will simply have to get used to the idea that you will die soon. I'm not sure when, but if I were you, I would put my things in order. You will be discharged tomorrow." And with that, he turned abruptly and his entourage followed (1999, pp. 119–120).

The second was as a resident. The patient was a young woman suffering from an asthmatic attack. After assessing her condition, he realized that no pharmaceutical drug would help and so he summoned a resident anesthesiologist to intubate her. Around an hour later, he returned to find the anesthesiologist chatting with the patient, and around two hours later he left with the patient breathing easily. No intubation was needed. Later while glancing at the patient sleeping comfortably, "I," Tauber informs the reader, "felt ashamed" (1999, p. 76).

What lessons do these powerful stories teach us about the patient-physician relationship and the practice of medicine, especially with respect to the biomedical or humanistic model? The first lesson is that physicians are persons with a history that shapes who they are not only personally but more importantly professionally. Tauber's family history provides the motivation and foundation for a career in medicine. While his father is instrumental in introducing Tauber to the professional dimension of medicine in terms of competence, his mother introduces him to the human dimension in terms of caring. As for many physicians these two dimensions are generally separate, and often in conflict with one another, and require joining.

Another lesson from Tauber's confessions is that patients are vulnerable and therefore require protection from overly dominating and abusive physicians. The patient with pancreatic cancer was certainly traumatized not only by her fatal illness but also by the careless and inhumane treatment of the attending physician. One can only imagine that physicians and often medical professions as a whole cause patients greater suffering than their illnesses. A final lesson is that the technical aspects of medicine are often ineffectual for treating chronic illness. As the anesthesiologist demonstrates all that was needed to stabilize the patient was being present in a caring manner, not intubation.

Conclusion: What Is Medicine?

What is medicine? Is it an art or a science—or a combination thereof? The debate over the nature of medicine is an ancient and a spirited one, which has not abated even in modern times but has intensified since the beginning of the twentieth century when the fortunes of medicine were tied to those of the natural sciences. The current debate over the nature of medicine is in terms not so much of art or science but rather in terms of evidence-based or patient-centered medicine. Traditionally the biomedical model envisions medicine as a science and as evidence-based, while the humanistic or humane models perceive medicine as an art and patient-centered. Much of the quality-of-care crisis, as discussed earlier, is a result of establishing medical practice on the natural sciences or reducing it to a science. The humanistic or humane modifications, in terms of stressing the artistic dimensions of medical practice or founding it on the patient, are to enhance the quality of medical care.

In a final section of this chapter, the nature of medicine is explored in terms of the biomedical model, which focuses on the *logos* or rationality of medicine that in turn drives its *ethos* or character, and in terms of the humanistic or humane models, which focus on the *ethos* of medicine that in turn drives their *logos*. My proposal is that modern medicine must undergo a revolution in terms of transforming its *logos* and *ethos* by grounding them in *pathos*.

Specifically, *pathos* can transform the *logos* of a biomedical practitioner's objective knowledge or technique and of a humanistic or humane practitioner's subjective information into wisdom, a wisdom that discerns the best and appropriate way of being and acting for both the patient and the physician. *Pathos* can also transform the *ethos* of a biomedical physician's emotionally detached concern or a humane physician's empathic care into a compassionate love that is both tender and unrestricted. That love is not a mawkish sentimentality but a vigorous passion that enters into the suffering of illness. Only a wise and loving stance will relieve the quality-of-care crisis of American medicine, by transforming both the *logos* and *ethos* of the biomedical and humanistic models.

J.A. Marcum, *Humanizing Modern Medicine: An Introductory Philosophy of Medicine,*

1 Art or Science?

The debate over whether medicine is an art or a science has a long history (Pellegrino, 1979b). However, it was most turbulent during the late nineteenth to early twentieth centuries, when the fate and fortune of medicine were tied to those of the natural sciences. The task for many scientifically minded physicians was to sever medicine from a vitalistic approach and to secure its foundation on scientific rationality (Welch, 1908). No longer was medicine an ineffectual discipline but throughout the twentieth century startling, if not miraculous, advances in terms of diagnostic and especially therapeutic procedures and protocols made scientific medicine a powerful and effective means of treating patients—or so the rhetoric ran. What was once medical ignorance under the guise of art was replaced by the certainty of the natural sciences.

As the twentieth century progressed, for many the art of medicine was eclipsed by or reduced to the science of medicine. But could, or even should, the art of medicine be reduced to the science of medicine? For example, physiology, with its emphasis on precision and the quantitative, became the backbone of medical practice, which was reserved historically for anatomy (Meltzer, 1904). But as J.R. Botkin (1992) fretted, the beauty of physiology is seductive and precaution must be taken to secure the humane treatment of the patient. In this section, the art of medicine is first explored followed then by the science of medicine. Two derivative questions concerning the reduction of art to science and the combination of art and science are examined next. Finally, the point of the debate, if there is one, is explored.

1.1 The Art of Medicine

For many physicians, medicine has always and foremost been an art with science ancillary to its main goal—to heal *this* patient. For example, “Overall medicine is as it has always been—not a science but an art. Science may help, but it must not be allowed to rule the art” (Bourns, 1983, p. 56). What was meant by the art of medicine is the establishment of a personal relationship between the patient and the physician that addresses the patient’s emotional and psychological needs. Others included in the art of medicine the link between soul and body, especially in terms of the discipline of psychology (Rushmore, 1923).

Besides the patient’s psychology others included as part of the art of medicine the physician’s sympathy for the patient, as well as other features of the physician’s personality including ambition and enthusiasm for medicine’s intellectual development, confidence in training and imperturbability and courage in the face of disaster and disease, and intellectual honestly when confronted with the unknown (Riesman, 1931).[1]

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[1] For some physicians the art of medicine referred just to the physician’s personality. For example, Robinson noted that this art “is associated with the so-called force of personality, knowledge of human nature and prestige by which a physician is often able to persuade or command or influence or even mislead a patient into a better state of health and comfort” (1929, p. 459).

The art of medicine "concerns itself not only with the sick individual but with the totality of his environment—his family, his friends, his occupation, his social and pecuniary status; indeed with everything that can favor or retard his recovery from illness" (Riesman, 1931, p. 374). It is a skill, then, in which the physician attends to the total care of the patient and its goal is the healing of the whole person not simply the curing of a diseased organ.[2]

The art of medicine certainly involves the application of the science to medical practice, which is its objective side, and includes the technical dimensions of patient care. "Art," according to Homer Swift, "implies arrangement, a creation of special conditions or relationships from available material…art has a never-ending task in arranging new combinations of materials which are constantly increased by science" (1928, p. 168). Art then is a craft or a doing. And, the art of medicine is a craft based on and at times guided by scientific and technical knowledge. Pellegrino likened the art of medicine to Aristotle's *techné*: "art had to do with the making of things, encompassing the necessary techniques and skills as well as the reasons underlying them" (1979b, p. 48).

The art of medicine is concerned with the concrete and particular aspects of medical knowledge and practice as they pertain to the individual patient. It is "the application of useful knowledge to attain beneficial results" (Hundley, 1963, p. 53). For John Fulton (1933), the development and use of the physician's hands played an important part in the objective side of medicine. Moreover, Swift demarcated between two roles for art in medicine: "Although the art of medicine may indicate the manner in which that knowledge may be applied it should also assist in the technique for acquiring new knowledge" (1928, p. 171).

1.2 The Science of Medicine

What is the science of medicine? Although medicine has been connected to the natural sciences since antiquity, most commentators locate medical science's contemporary appearance with the scientific revolution of the seventeenth century—especially with William Harvey's discovery of circulation (Riesman, 1931). However, the identification of medicine as a science by the profession at large did not occur until the late nineteenth and early twentieth centuries. The issue at this time for many physicians and other scientists was whether life or living organisms could or should be explained simply in physico-chemical or in vitalistic terms. For William Welch, as for many other scientifically minded physicians, the former terms were adopted and medical knowledge and practice were viewed as "rational…observational and inductive, mainly physical, as distinguished from

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[2] The art of medicine, claimed Gay, involves "the skill in human contact in its most intimate and revealing complexities" (1926, p. 511).

vitalistic, and nearly devoid of superstition and the supernatural" (1908, p. 53). During the first half of the twentieth century, definitions of medicine as a science reflected this perspective. "The science of medicine," according to Fulton, "has reference to the analysis and interpretation of normal and pathological processes of the body in terms of physical and chemical laws (in so far as this is possible) with the end in view of instituting sound therapy" (1933, p. 112).

Whether medicine is a science for many depended upon how science is defined, even though most admitted that there is no good definition for science. For example, Alfred Cohn adopted George Sarton's definition of science as "systematized human knowledge" (1928, p. 405). For Cohn, the science of medicine entails the systematic study of diseases, especially using Virchow's doctrine of the cellular pathology and the methods of physiological and pathological investigation. Others also viewed the science of medicine as the systematic study of disease: "medicine, the science that most intimately concerns man,…deals directly with his body in a state of disease" (Swift, 1928, p. 169).

Lee Forstrom utilized R.B. Braithwaite's characterization of science to identify two features of clinical science: domain of investigation and investigative function. "The domain of clinical medicine," according to Forstrom, "is the human organism, in its manifold environmental contexts, in health and disease" (1977, p. 9). An important constraint is the notion of human disease and health, which narrows the domain of clinical science and distinguishes it from other scientific disciplines. The investigative function of clinical medicine pertains to both the clinic and operating room, spaces in which clinicians investigate the complexities of human illness. In these "laboratories," clinicians advance medical knowledge for their practice: "In its observation, testing, and intervention in these complex phenomena, clinical medicine exercises investigative as well as the more immediately apparent 'diagnostic' and 'therapeutic' functions" (Forstrom, 1977, p. 11).

Many commentators viewed medicine as a science, based on the traditional canon of science. "That canon," according to Pellegrino, "contained three elements: a method, a body of knowledge built up by that method, and an ex post facto explanation of reality based on generalizable laws which related the facts acquired by scientific method to each other" (1979b, p. 46). The scientific method was generally considered *the* method by which physician-scientists diagnose the patient's disease and then determine the best means to treat it. The method, as Lester King defined it, is "the foundation, on the basis of raw data, of articulate hypotheses, through which definite predictions, subject to verification, can be made" (1952, p. 131). Again, Swift characterized the scientific method as empirical, which involves "a tripod of observation, reasoning and experiment" (1928, p. 169).[3]

As for the second element of the canon, the method of medical research and investigation has delivered a specific body of knowledge, as well as its own technical language: "medicine has accumulated theoretical knowledge of its own and this has

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[3] Swift went on to assert that "it is necessary for the physician, whether in the laboratory or at the bedside, to approach his problem from the experimental viewpoint" (1928, p. 170).

had its origins in age-long and varying experience" (Cohn, 1928, p. 405). Of course, this body of knowledge also reflects the knowledge obtained from the other natural sciences like biology, chemistry, and physics (Swift, 1928).

The final element of the canon is identification of generalizations based on particulars. Although medicine deals with individual patients, this does not preclude generalizations. "Each individual patient," according to Clouser, "is indeed a nexus of causal chains making a unique particular. But that by no means makes abstraction and generalization over these particulars impossible" (1977, p. 5). Rather, generalizations in clinical medicine are possible "in principle" but are currently prohibited because of the complexity of medicine's subject matter.

Although these definitions seem straight forward for many others the definition of science or natural science *per se* was problematic, thus making any definition of medical science also problematic. Commentators on the nature of medicine felt that identifying medicine as a science was, for example, reductionistic. They asked whether medicine, especially its art form, can be reduced to science. For example, Canby Robinson queried whether "it is not unlikely that medical practice can ever be reduced strictly to a state of applied science, such as engineering" (1929, p. 460).[4] Moreover, Ronald Munson argued that medicine cannot be a science because of fundamental differences between them: "the aim of medicine is to promote health through the prevention and treatment of disease, while the aim of science is to acquire knowledge; medicine judges its cognitive formulations by their practical results in promoting health, while science evaluates its theories by the criterion of truth" (1981, p. 204).

Recently, Hunter has claimed that medicine is not a science. Although she is aware that the circumstantial evidence points to medicine as a science, she insists that "medicine is not a science as science is commonly understood: an invariant and predictive account of the physical world" (1991, p. xviii).[5] For Hunter, as for Cassell (1991), the goal of medicine is to relieve *this* patient's suffering and to accomplish that goal science is certainly drawn upon but "medicine is (as it always has been) a practical body of knowledge brought to bear on the understanding and treatment of particular cases" (1991, p. xviii). Medicine is not so much a science as it is an art of interpreting the patient as text.

Besides the natural sciences, some commentators have examined the sociological nature of medicine, i.e. "Is medicine a social science?" For example, Michael Martin (1981) explored three possible interpretations of this question. The first is that medicine is wholly or just a social science. He rejected this interpretation on *prima facie* grounds, since physicians engage in scientific or technical analysis of the patient's physical state. Patrick Heelan (1977) identified the picture of the patient from this analysis as a "scientific image."[6] The second interpretation is that

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[4] Robinson did acknowledge that if the physician has exhaustive knowledge of the patient then he or she would be a "great artist."

[5] For her understanding of science, Hunter draws upon Plato's *Gorgias* (464).

[6] Heelan defined scientific images as "the products of theory construction and testing, experimentation, and objective measurement" (1977, p. 21).

medicine is "in part" a social science. In other words, there are social factors that can influence a patient's health or disease. Martin certainly acknowledged that this interpretation is true but in a trivial sense.

Martin also proposed a third interpretation in that medicine as a social science is a "slogan." By this, he meant that "the social scientific dimension of medicine is larger and more important than is usually recognized" (Martin, 1981, p. 348). To substantiate this proposal, he discussed the social influences on the origins, explanation and prevention of disease. Again, Heelan (1977) denoted the social picture of the patient as a "manifest image."[7] This image of the patient provides the clinician with "access to resources for understanding of the social, cultural, and hermeneutical complexity of the life-worlds of man" (Heelan, 1977, p. 32). Thus, the scientific image of the patient requires the manifest or social image in order to provide the physician with a complete picture of the patient. Only with such a full image of the patient, then, is holistic healing possible.

1.3 Combination or Tertium Quid

Is medicine a combination of art and science? Many commentators on this question believe that medicine must combine both to be effective. For example, Fulton (1933) championed a "union" of art and science—while Hundley (1963) a "balance" between them—for a successful clinical practice. Many metaphors have been used to illustrate the connection between the art and science of medicine. For example, Riesman suggested: "The art and the science of medicine are like the two sides of a shield; neither can exist alone; neither by itself can achieve the grand goal for which medicine has been striving through the ages—to relieve suffering and to prevent disease" (1931, p. 373). In other words, the physician should not only be scientifically or technically competent but also a caring and compassionate person. "The art of medicine and the science of medicine," according to Peabody, "are not antagonistic but supplementary to each other" (1984, p. 813).

Blumgart (1964) also claimed that the science of medicine and the art of medicine are not "mutually antagonistic" but rather "complementary." For him the intersection of the science and art of medicine is the patient. "Without scientific knowledge," argued Blumgart, "a compassionate wish to serve mankind's health is meaningless. But scientific knowledge without wisdom," he stressed on the other hand, "is a frozen storehouse" (1964, p. 449). The wisdom necessary for efficacious application of medical knowledge from scientific endeavors is obtained from years of caring for patients as persons and not simply as diseased parts that are reduced to their physical and chemical states.

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[7] Manifest images, according to Heelan, "manifest objects directly as functions of shared subjective intentions within some context spanned by the instruments and embodiments of shared values, meanings, and purposes" (1977, p. 20).

Finally, is medicine neither art nor science but something else? Some commentators agree that the art and science of medicine are necessary for medical knowledge and practice but insufficient for explicating the nature of medicine.[8] For example, Marinker claims that "medicine should be regarded neither as an art nor as a science in itself, but as a special kind of relationship between two persons, a doctor and a patient" (1975, p. 83). For Pellegrino, what guides that relationship is the end or purpose of medicine—the healing bond. "Medicine in its function as medicine" argues Pellegrino, "resides in making of a prudent healing decision for a specific person" (1979b, p. 49). Although medicine cannot accomplish this end without both art and science, its practice is separate from both. Pellegrino and Thomasma claim that "medicine is a distinct intermediate discipline, a *tertium quid*" (1981a, p. 59). They view medicine as a unitary and unique discipline, in which the science of medicine in terms of its healing technology is applied with a humane or an artistic touch.

Interestingly, Pellegrino (1979b) claims that the debate over whether medicine is an art or a science is pointless. However, having made this bold claim, he seems to retreat from it. "How science and art are construed, and how much of each we think we use in medicine" Pellegrino admits, "must be assessed by each of us. The physician's self-image, education and satisfaction are" he adds, "inextricably bound to these construals" (1979b, p. 51). He believes that each physician must come to a consensus concerning the role of art and science for how he or she is going to practice medicine. Indeed, earlier Swift argued that "the skill in which we mingle the two will determine our success" (1928, p. 171).

However, the above position on the point of the debate begs the larger normative question. How should the profession itself view or address the debate? Besides the standard interpretations of the debate, it is important for another reason—the temptation to reduce the art of medicine to its science and the patient to a machine. As John Hundley has warned: "It is the *art* of medicine, applying with reason and judgment the science on which much of medicine is based, which enables the discriminating and wise physician to make the distinction, and by so doing, avoid the apparently increasing risk of becoming only a scientific medical technician" (1963, p. 54). The distinction between the art of medicine and the science of medicine is an important distinction and one that is crucial for understanding the very nature of medical knowledge and practice.

2 Evidence-Based or Patient-Centered?

Although the debate over whether medicine is or should be an art or a science appears to have faded during the latter part of the twentieth century, it really took on a new form—the debate over whether medicine is or should be evidence-based

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[8] According to Tauber, "medicine cannot attain the status of a natural science, nor should it. Instead, allow biomedicine to establish its own scientific ethos" (2005, p. 35).

or patient-centered. Evidence-based medicine (EBM) is driven by the metaphysical and epistemological dimensions of the biomedical model, i.e. the physician is to apply the latest therapy proven effective through RCTs. Patient-centered medicine (PCM), however, is based on the moral or humane nature of the patient-physician relationship, i.e. the physician takes into consideration the patient's emotional state and value structure. Besides PCM there are a host of closely related versions, such as "real-world medicine" (Hampton, 2002). However, two related versions include narrative-based medicine (NBM) and value-based medicine (VBM). In this section, EBM is discussed first, followed by PCM and finally by NBM and VBM.

2.1 Evidence-Based Medicine

Although the phrase EBM is recent in origin, the idea has a long history in medicine; at least this is the claim according to its proponents.[9] There are three historical periods to EBM, with one transition period (Claridge and Fabian, 2005). The first period, ancient era EBM, involved anecdotal accounts transmitted through authoritative teachings. The next period, Renaissance era EBM, began during the seventeenth century with challenges to popular therapies, such as bloodletting. For example, trials were conducted to evaluate the efficacy of bloodletting. The result was the abandonment of bloodletting by the end of the nineteenth century.

A transition period from the 1900s to the 1970s issued in the RCT, which made possible modern era EBM in the latter part of the twentieth century. The two framers of contemporary EBM are Archie Cochrane from the United Kingdom and the Evidence-Based Medicine Working Group chaired by Gordon Guyatt of Canada. The Cochrane Collaboration, founded in 1993, provides reviews of up-to-date evidence from clinical trials (Chalmers, 1993). Contemporary EBM is an attempt to manage large amounts of medical research evidence, in order to help "patients and societies make better choices and thereby optimize patient outcomes and public health" (Woolf, 2001, p. 41).

The Evidence-Based Medicine Working Group provided one of the first comprehensive and most recognized articulations of EBM. EBM is often envisioned as a new paradigm in contrast to the old paradigm of traditional medicine. The old paradigm is predicated upon unsystematic observations and traditional medical training that focuses exclusively on pathophysiology and clinical experience. "This paradigm," according to the Working Group, "puts a high value on traditional scientific authority and adherence to community standard approaches, and answers are frequently sought from direct contact with local experts or reference to the writings of international experts" (Evidence-Based Medicine Working Group, 1992, p. 2421).

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[9] The phrase "evidence-based medicine" first arose during the early 1990s at McMaster University and is the descendent of clinical epidemiology (Claridge and Fabian, 2005; Liberati and Vineis, 2004; Sackett, 1997).

The new paradigm, EBM, puts less stock in traditional medical authority and more in systematic observations, especially obtained from RCTs, and interpretation of those observations though meta-analysis (MA). The outcome of this paradigm is that "physicians whose practice is based on an understanding of the underlying evidence will provide superior patient care" (Evidence-Based Medicine Working Group, 1992, p. 2421). According to the Working Group, the new paradigm represents a Kuhnian paradigm shift and the future of medical practice.

David Sackett, an original member of the Evidence-Based Medicine Working Group, and colleagues formulated one of the first and best known consensus definitions for EBM: "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett et al., 1996, p. 71).[10] EBM is a combination of the best available research evidence from RCTs and MAs, along with the clinician's personal expertise and experience. The "good" physician requires both for practice since either alone is insufficient: "Without clinical expertise, practice risks becoming tyrannized by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient. Without current best evidence, practice risks becoming rapidly out of date, to the detriment of patients" (Sackett et al., 1996, p. 72).

Besides identifying what EBM is, Sackett and colleagues also identify what it is not. EBM is certainly not "old hat" medicine, since the rise of evidence from RCT is rather recent. Moreover, it is not impractical, in that it is not impossible to practice EBM, as evident from studies demonstrating that clinicians and surgeons are successfully applying it. Finally, EBM is definitely not "cookbook" medicine since it requires the input of the clinician's expertise in applying a treatment established by the best available scientific and clinical evidence. EBM, then, provides the best possible medical care based on the latest technological advances, experimental and clinical data and observations, and the best theoretical explanations and logical thinking.[11]

Sackett and colleagues have proposed five steps for the practice of EBM (Sackett et al., 1998). The first is the articulation of clinical question(s) concerning the patient's disease state. An important feature of these questions is that they must be clearly focused on the patient's problem and answerable by searching available literature databases. They propose that the question(s) should be structured in a PICO format: patient or problem, intervention, comparison of interventions, and outcome(s). The next step is finding the relevant evidence within a medical literature database, like PubMed, to answer the question(s). The success of such searches depends upon identifying the appropriate key words and databases.

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[10] For example, Amit Ghosh uses Sackett's definition of EBM to formulate his own: "Evidence-based medicine refers to the conscientious, explicit, and judicious use of the best available evidence in health-care decision-making" (2004, p. 60).

[11] According to Woolf, "EBM emphasizes comprehensiveness and applies systematic criteria to ensure that all relevant evidence is considered, rather than being cited selectively, and that the quality of studies is evaluated fairly, regardless of preconceived biases" (2001, p. 39).

The third step is the appraisal of the evidence obtained from the search, with respect to its validity or soundness and its clinical usefulness. Appraisal is a skilled activity that requires training and experience. The next to last step is applying the evidence to the patient's problem, especially in terms of the patient's values. The decision is often the patient's obligation, given the evidence presented by the physician. The final step is formal evaluation of the four steps to determine the effectiveness of the process.[12]

There is generally little, if any, room in the biomedical model, especially in terms of EBM, for the intuitive dimensions of either the physician or patient. Indeed, the biomedical model of medical knowledge and practice strives to be strictly rational and evidence-based. According to Liberati and Vineis, "intuition and unsystematic clinical experience as well as a pathophysiological rationale are insufficient grounds for clinical decision making. On the contrary," they insist, "the modern practice of medicine finds its way by reliance on formal rules aimed at interpreting the results of clinical research effectively; these rules must complement the medical training and common sense of clinicians" (2004, p. 120). Moreover, EBM requires an extended commitment on the physician's part in terms of training: "The practice of evidence-based medicine is a process of life-long, self-directed learning in which caring for one's own patients creates the need for clinically important information about diagnosis, prognosis, therapy, and other clinical and health care issues" (Sackett, 1997, p. 4).

EBM also depends on advances in computer technology. The reliance of medicine on such technology was presaged in the early 1970s. At that time, the application of the computer to medicine was heralded to revolutionize medical practice in the near future: "it seems probable that in the not too distant future the physician and the computer will engage in frequent dialogue, the computer continuously taking note of history, physical findings, laboratory data, and the like, alerting the physician to the most probable diagnoses and suggesting the appropriate, safest course of action" (Schwartz, 1970, p. 1258). Although the application of the computer to medical practice took longer than originally anticipated, we now benefit from the use of computers in diagnostic procedures such as computerized tomography. Moreover, search engines, like PubMed, provide ready access to results from RCTs and MAs. Finally, the application of artificial intelligence holds great promise—or so its adherents claim—for tomorrow's medical knowledge and practice (Coiera, 1996).

Although no one argues with the rational basis of medicine or even with its evidentiary base, there is considerable discussion and debate over the notion of EBM. Consequently, EBM is severely criticized on several fronts. For example,

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[12] Porzsolt and colleagues have proposed a sixth step for EBM practice (Porzsolt et al., 2003). They find that including after the first step an additional step in which the physician attempts to answer the question(s) based on internal evidence, i.e. the physician's current knowledge, assist physicians in implementing EBM into their practice. This additional step also allows the physician to compare his or her previous knowledge with current evidence and to determine which is best for the patient.

an anonymous organization that calls itself Clinicians for the Restoration of Autonomous Practice provided a scathing attack on EBM in a 2002 issue of the *British Medical Journal* (CRAP Writing Group, 2002). This Writing Group claims to have "irrefutable proof that EBM is, indeed, a full-blown religious movement, complete with a priesthood, catechisms, a liturgy, religious symbols, and sacraments" (2002, p. 1496).

The above criticisms are in response to the aggressive claim made by EBM's proponents that EBM represents a "paradigmatic shift" in medicine, from a nonscientific medicine to a scientific one. It is this claim to which the defenders of the older, traditional medicine bristle and take umbrage. However, this claim is "not only simplistic but, as any closer scrutiny will reveal, profoundly wrong. The difference that needs to be marked is not that before EBM people did not use the evidence. Rather, the real failure was the lack of a framework and a set of rules to use the evidence in a systematic and explicit fashion" (Liberati and Vineis, 2004, p. 120).

Critics of EBM also raise other objections and concerns. For example, Abhaya Kulkarni (2005) identifies several empirical and conceptual problems, including differing opinions of MAs over evidence, conflicting results from RCTs, and threshold for accepting current evidence. Also, John Worrall (2002) raises the problem associated with EBM's dependence on randomization. He claims it only controls for selection bias.

In addition, Mark Tonelli (1998) distinguishes several philosophical limitations to EBM. The first limit is that evidence obtained from population-based studies like RCTs is not readily applicable to any individual patient, given the variation from one patient to another. This limit is epistemological in nature. Another limit is ethical, in that EBM cannot address the ethical question of whether the patient wants to undergo the treatment based on the best evidence. Finally, there is a tacit limit to medical judgment that outstrips the algorithmic approach of EBM. "Clinical judgment appears to contain a tacit element," Tonelli opines, "one that cannot be captured by decision analysis or any other explicit model" (1998, p. 1238). For him, clinical judgment is more akin to casuistry than to scientific rationality.

The proponents of EBM have responded to these criticisms. They certainly recognize that there are a number of limitations to EBM but believe that they can be addressed successfully. For example, "the elimination of individual difference in trials does not render trial data inapplicable to individuals; rather, it makes it applicable to the extent that individuals share relevant characteristics with trial participants" (Parker, 2002, p. 275). But critics counter that the patients corresponding to the test population represent only a small part of the larger "real world" patient population. Sharon Straus and Finlay McAlister (2000) acknowledge this problem but report that subgroup studies to the main RCTs are conducted to include patient values and particularities. Moreover, Malcolm Parker cautions that stressing the uniqueness of patients underestimates the commonality of patients: "Overweening particularism is a conceit as harmful as coercive scientific generalization" (2002, p. 279). Finally, Straus and McAlister (2000) address what they consider to be the predominant misperception: EBM is an "ivory-tower" notion, with little "real world" application. Clinical surveys, however, reveal otherwise.

2.2 Patient-Centered Medicine

Can EBM provide the necessary resources for comprehensive medical knowledge and practice? Although EBM is revolutionizing medicine and providing a solid empirical basis for medical knowledge and practice, especially in terms of RCT and MA, some commentators believe that EBM is unable to under gird modern medicine adequately or completely. "There is no doubt," according to Liberati and Vineis, "that EBM does not, and cannot, answer all the epistemological and practical questions surrounding the practice of medicine" (2004, p. 120).

EBM certainly provides physicians with the methodological skills to utilize current empirical evidence needed for medical knowledge and practice; but, claim many critics, what about the patient's personal information. In the last several decades, PCM arose to prominence in medicine to address this need (Stewart et al., 2003). It is based on the patient's personal information and history, especially information the biomedical model finds distracting: "in RCTs patient characteristics are considered a nuisance that might disturb the results of the study, instead of providing valuable extra information" (Bensing, 2000, p. 19). It is that information that is critical for the practice of patient-centered or humanistic medicine.

PCM is often contrasted with EBM. EBM is thought to represent the natural or "hard" sciences, while PCM the clinical or "soft" sciences (Stewart et al., 2003). Whereas EBM "has basically a positivistic, biomedical perspective…Patient-centered medicine…has basically a humanistic, biopsychosocial perspective" (Bensing, 2000, p. 17). According to Jozien Bensing PCM is also distinct from EBM's "diseased-centered" perspective, since "the patient is more than his or her disease" (2000, p. 21). PCM "deals with the content of the consultation, the choice of topics that should or could be addressed, according to the patients' needs and expectations" (Bensing, 2000, p. 21). It also "deals with the control over the consultation, with the question whose agenda is dealt with, who is expected and has the power to make decisions" (Bensing, 2000, p. 22). Moreover, PCM is distinct from EBM's "doctor-centered" tendency, particularly with an emphasis on patient autonomy. In PCM, the focus is shifted from diagnostic accuracy in the physician-centered consultation to the patient's illness experience.

The goal of PCM is to bring the patient's world into focus. "The physician," according to Ian McWhinney, "is enjoined to discover the patient's expectations, his feeling about illness, and his fears. He does this by trying to enter the patient's world and to see the illness through the patient's eyes" (1988, p. 225). Moreover, the patient-physician consultation is a "moral encounter, and the responsibilities that spring from it (for both parties), can then provide the framework *within* which any effective consultation can take place" (Evans, 2003, p. 9).

The means to achieve PCM's goal is effective communication. Bensing emphasizes that "the best way to know the patients' agenda is still, and will perhaps always be, listening to the patients' story and seeking the right balance in the decision making process" (2000, p. 23). Communication, then, is critical for the success of PCM: "communication is the royal pathway to patient-centered medicine"

(Bensing, 2000, p. 23). There are three reasons why communication is essential for PCM: the patient is *the* expert in terms of the patient's illness experience, different patients have different preferences in terms of healthcare, and patient morbidity depends upon patient's adaptation and coping mechanisms (Bensing et al., 2000).

Moria Stewart and colleagues have identified six, interacting components to PCM (Stewart et al., 2003). The first is the assessment of the two elements of the patient's presenting complaint, in term of the physical disease itself and of the patient's illness experience. The first element is obtained through the traditional medical history and physical exam, while the second through communication with the patient in terms of the impact the illness has on the patient's lifestyle and emotional wellbeing. The next component is integrating the information obtained in the first component with an overall understanding of the patient as a whole person, including the patient's proximal and distal contexts.

The third component is uncovering a common ground between patient and physician, particularly with respect to identifying the patient's health problem, agreeing on the therapeutic modalities, and defining the roles played by both the patient and physician. The next component involves promoting patient-physician consultations as an opportunity to promote wellness and to prevent further health problems. The fifth component is the growth and establishment of the patient-physician relationship, especially through compassion on part of the physician and compliance on part of the patient. The final component is that both the patient and physician must be realistic about the limitations of modern medicine: the former cannot expect miracles and the latter cannot promise them.

Although EBM and PCM appear to be polar opposites of one another there is significant overlap between them, according to some commentators. For example, Stewart and colleagues claim that EBM and PCM are "synergistic," in that both approaches to the practice of medicine converge to produce "creative tension" between the physician's and the patient's perspectives (Stewart et al., 2003, p. 12). Bensing proposes an integration of EBM and PCM. He advocates improving PCM by developing more rigorous communication studies that mimic RCT, which would provide explanations for behavioral activities between patients and physicians during the clinical encounter. Bensing also proposes to bridge the gap between EBM and PCM through communication studies, particularly by incorporating patients' preferences into the design of RCTs, thereby making EBM more patient-centered. "The challenge for the near future," according to Bensing, "is to bring these separate worlds together" (2000, p. 17). The obvious benefit is a more robust medicine, in which the patient's health needs are met and the physician's role as healer confirmed.

2.3 Narrative-Based Medicine

Communication between physician and patient, as noted above, is critical for the success of humanistic or humane medicine. Besides PCM, another type of humanistic medicine—NBM—has also gained prominence in the last several decades.

The physician enters the patient's world of illness and suffering and learns what it means to the patient, by listening sympathetically to the illness story. For example, Arthur Kleinman champions the importance of the patient's narrative and the physician's responsibility to take it into account, during the healing process:

> The work of the practitioner includes the sensitive solicitation of the patient's and the family's stories of the illness, the assembling of a mini-ethnography of the changing contexts of chronicity, informed negotiation with alternative lay perspectives on care, and what amounts to a brief medical psychotherapy for the multiple, ongoing threats and losses that make chronic illness so profoundly disruptive (1988, p. 10).

The meaning that a patient attaches to illness and suffering, especially chronic or fatal illness, is critical for the healing process—and that meaning is readily accessible through the patient's illness story. Consequently, it is imperative that the physician take this story seriously when diagnosing and treating the patient. According to Rita Charon, "narrative medicine can give physicians and surgeons the skills, methods, and texts to learn how to imbue the facts and objects of health and illness with their consequences and meanings for individual patients and physicians" (2001, p. 1898).

Trisha Greenhalgh and Brian Hurwitz (1999) point out several important advantages of NBM. For diagnosis, NBM provides an atmosphere in which professional intimacy can be fostered between patient and physician and also assists both patient and physician in developing an understanding, respectively, the meaning of the illness. It also facilitates sympathy between the physician and patient by permitting the patient to tell the illness story and the physician to listen intently to it. Often by listening to the patient's illness narrative the patient reveals the diagnosis to the physician, since narrative represents the "phenomenal form" of the illness. For therapy, NBM provides the occasion for a holistic approach to healing. It also facilitates the analysis of alternative therapeutic modalities or for palliative care instead of an aggressive therapeutic modality. "The core clinical skills of listening, questioning, delineating, marshalling, explaining, and interpreting," claim Greenhalgh and Hurwitz, "may provide a way of mediating between the very different worlds of patients and health professionals" (1999, p. 50).

2.4 Value-Based Medicine

VBM is proposed not so much as an alternative to but more as an extension of EBM; and, it reflects the rise of consumerism in medicine (Kottow, 2002). VBM is pyramidal in structure, with EBM at its base and with an intermediate tier composed of patient-perceived values in terms of quality and/or length of life, and with a top tier in which the patient-perceived values are converted to economic values by cost-utility analysis. "Value-based medicine," as defined by Melissa Brown and colleagues, "integrates the best EBM data with the patient-perceived quality of life improvement conferred by a healthcare intervention" (Brown et al., 2005, p. 5).

Cost-utility analysis is the means by which to quantitate treatment outcome in units of monetary expense per gain in quality or length of life. This analysis is imperative for distinguishing between interventions that provide little, if any, gain from those that provide maximum gain at minimum cost. VBM is an "information system" that improves the quality of healthcare and, at the same time, makes healthcare more cost-effective or efficient. "VBM," according to Brown and associates, "allows clinicians to practice the highest quality of healthcare…Because it permits clinicians to selectively utilize interventions that deliver the greatest value from the viewpoints of patients who have lived in a health state" (Brown et al., 2005, p. 9).

3 From *Logos* and *Ethos* to *Pathos*

The earlier debate between the art and science of medicine and its contemporary manifestation in terms of EBM and PCM belie a deep problem with the nature of medicine, particularly with respect to the quality-of-care crisis. A complementary position or even a third alternative position to this debate is unlikely to resolve the crisis; rather, the resolution involves the connection of medicine with its *pathos*. For the underlying problem, especially for American medicine, is that its *logos* (rationality) and *ethos* (character) are severed from its *pathos* (passion).

The paradigmatic shift that American medicine must undergo is not just from the biomedical model to one of its humanistic or humane versions or even to one of the alternative models, but from a medicine concerned only with *logos* and/or *ethos* to a medicine rooted in *pathos*. For scientific knowledge or personal information and emotionally detached concern or empathic care to be effective, they must be rooted in passion.

Contemporary medicine must secure a sensitive and responsive *pathos* to guide its rationally oriented *logos* and character-driven *ethos*, before it can address the issues surrounding the quality-of-crisis facing it. This *pathos* reflects a way of being present in and to the patient's suffering and not just knowing accurately or acting appropriately in the presence of the disease or illness. *Pathos* implies here more than simple emotion or desire; rather, it reflects a passionate or ardent way of being fully present that makes *possible* both accurate knowing or understanding and right doing or acting. Fundamentally, humans are conscious and irritable persons that respond as self to their environment and to others in it and by such responding are responsible for that response. It is that self-conscious respond-ability or response-ability that makes *possible* rational and virtuous or passionate medical knowledge and practice.

But how can rooting of *logos* and *ethos* in *pathos* affect change in the healthcare industry, from a philosophical perspective? The answer is two-fold. First, *pathos* can transform the *logos* of technique, facts, objective knowledge, and subjective information into wisdom, a complete or comprehensive wisdom that can discern the best and appropriate way of being and acting for both the patient and the physician. Second, *pathos* can transform the *ethos* of the biomedical physician's emotionally detached concern or even the humanistic physician's empathic care into a love that is both tender and unrestricted. For: "Every illness is also a plea for love and attention" (Marinker, 1975, p. 82). And: "The prescription, love thy patient, is good medicine for the good doctor" (Rhodes, 1995, p. 441). This love is not a mawkish sentimentality but a vigorous passion that enters into the suffering of illness; it is a compassionate or suffering love.

In this final section, I explore the transformation of medicine's *logos* and *ethos via pathos* to produce a wise and loving medical stance and practice. To that end, the nature of *pathos* is first explicated, followed by its transformation of *logos* as knowledge or information into wisdom and of *ethos* as concern or care into compassionate love. For, only a wise and loving stance will resolve the quality-of-care crisis in modern medicine, especially in America.

3.1 Pathos

What is *pathos*? Traditionally, *pathos* is associated with the emotions or passions. For example, *pathos* is a person's quality or state in which an emotion like kindness or mercy is evoked. It is often contrasted with *ethos*, which is associated with unflappable or unquestionable character, and with *logos*, which is concerned with an argument's strength or validity. *Pathos* involves the transient and deficient, while *ethos* the permanent and ideal.

Pathos is also one of the three proofs (*pistesis*), along with *logos* (logical validity) and *ethos* (credible character), which Aristotle (2001) delineated in the *Rhetoric*. The function of *pathos* is to persuade another through an emotional appeal. *Pathos* as used here, however, transcends the emotional or even the logical. It is a power or force that operates like an assumption in a metaphysical sense. Although emotion as *pathos* may represent a power, *pathos per se* is not limited to just an emotional force. It is a power or force that makes *possible*, especially in terms of creating or transforming, whether at the logical or ethical level.

The use of *pathos* as a power or force akin to a metaphysical assumption must also be distinguished from the notion of "metaphysical pathos," as developed by Arthur Lovejoy (1873–1962). "'Metaphysical pathos' is exemplified," according to Lovejoy, "in any description of the nature of things, any characterization of the world to which one belongs, in terms which, like the words of a poem, awaken through their associations, and through a sort of empathy which they engender, a congenial mood, or tone of feeling on the part of the philosopher or his readers" (1936, p. 11). In other words, a metaphysical pathos represents "the emotional 'charge' of certain words and phrases" (Macksey, 2002, p. 1089).

Lovejoy distinguished five types of metaphysical pathos, including the pathos of obscurity, esoteric, eternalistic, monistic or pantheistic, and voluntaristic. Since Lovejoy published his notion in the mid 1930s, others have identified additional types of metaphysical pathos. For example, bureaucratization represents a metaphysical pathos that shaped post-World War II industrialization (Gouldner, 1954).

And, "technicism" is a metaphysical pathos that has shaped much of contemporary social organization (McSwain and White, 1989). Interestingly, the fear over technicism is that it may result in a "broad-scale emotional anesthetization of the human race," unless accompanied by openness to a "caring commitment." Although Lovejoy's metaphysical pathos is different from my use of *pathos*, it is similar to the role *pathos* plays here in that both are critical for shaping philosophical systems, even their logic.

3.2 Wisdom

We live in an information age, an age in which we know more than ever, and yet, an age in which we face more problems than ever but fewer solutions to those problems. "We are saturated with information," according to shaman Kakkib li'Dthia Warrawee'a, "and lacking in the most vital ingredient: wisdom" (2004, p. 9). Many medical pundits comment especially on the glut of knowledge and information and yet on the dearth of wisdom for applying that knowledge and information in the biomedical sciences. For example, Robert Pollack queries: "Why is there not more wisdom in the application of scientific discoveries to the lives of sick and suffering people?" (1999, p. 1477). The issue for contemporary medicine is how to move beyond biomedical knowledge and information to wise application of that knowledge and information in clinical practice. Although Pollack and others attempt to answer this bothersome question, part of the problem in answering it is that wisdom itself is not well understood and difficult to explicate.[13]

What is wisdom? The ancient Greeks defined it in terms of action with respect to virtue, whether intellectual or moral. The wise person acts in accordance with the virtues and the virtuous person acts in accordance with wisdom, especially to enhance a person's flourishing or *eudaimonia*. In the *Nicomachean Ethics*, Aristotle called wisdom "the most finished of the forms of knowledge" and divided it into the theoretical or philosophical (*sophia*) and the practical or political (*phronesis*) (2001, 1141a16). Theoretical wisdom is contemplative in nature and is sought for its own sake: "philosophic wisdom is scientific knowledge, combined with intuitive reason, of the things that are highest by nature" (Aristotle, 2001, 1141b3–4). The intuitive reason is *nous* or the ability to grasp the first principles, while the scientific knowledge is *episteme* that involves knowing the four causes.

"Practical wisdom on the other hand," according to Aristotle, "is concerned with things human and things about which it is possible to deliberate" (2001, 1141b8–9). In other words, it is concerned with the pragmatic activities of life. Practical wisdom is concerned not only with universals, like theoretical wisdom, but also with

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[13] Moreover, an important dimension in applying wisdom to the biomedical sciences is often overlooked, i.e. the role of pathos in transforming biomedical facts into wise insights in how to treat patients.

particulars, unlike theoretical wisdom. Moreover, Aristotle argued that theoretical wisdom ranks higher than practical wisdom, since practical or political wisdom is concerned with man, who is "not the best thing in the world" (2001, 1141a23).

Contemporary approaches to wisdom are indebted to the ancient Greeks. "Wisdom in its broadest and commonest sense," according to Brand Blanshard, "denotes sound and serene judgment regarding the conduct of life" (1967, p. 322). There are several components inherent to this definition, including knowledge, reflectiveness, judgment, and self-trust (Blanshard, 1967; Kekes, 1983; Szawarski, 2004). The first component of wisdom is knowledge or facts (Szawarski, 2004). Drawing on John Kekes distinction between descriptive and interpretative knowledge, Zbigiew Szawarski claims that "if there is any knowledge relevant for wisdom it is knowledge of what matters, what is important, what has merit, and what is significant in the human predicament" (2004, p. 186). Wisdom, then, consists of interpretative, not descriptive, knowledge.

Interpretative knowledge is the product of "basic assumptions," which "mark the dimensions of human experience by setting limits to human possibility; variations and differences occur within these limits" (Kekes, 1983, p. 278). Basic assumptions are the universally held assumptions that are used to interpret facts and thereby yield interpretative knowledge. The use of these assumptions for making genuine and accurate interpretations depends on the "breadth and depth" of one's experience. The end result of interpretative knowledge is *eudaimonia* or the good life. "What a wise man knows, therefore," according to Kekes, "is how to construct a pattern that, given the human situation, is likely to lead to a good life" (1983, p. 280).

Another important component of wisdom is reflectiveness, which he defines as "the habit of considering events and beliefs in the light of their grounds and consequences" (Blanshard, 1967, p. 323). In other words, wisdom consists in foresight into the possible course of action that would result from certain beliefs about the way the world is or should be. If one subscribes to a particular set of beliefs, then a certain set of events is possible. The task of a wise person is to foresee which course of action is best or good, given a specific set of conditions.

Reflectiveness is critical then for gaining interpretative knowledge, which is required for presaging the consequences of a certain set of beliefs and actions. Besides foresight, reflectiveness is also necessary for correcting unwise behavior and choices. "Wisdom," according to Kekes, "is corrective. It reminds the unwise of the relevance of their own descriptive knowledge to their pursuits" (1983, p. 282). Wisdom obtained through reflectiveness informs the wise person as to what is *possible* and what is not, thus guarding a person against ideals that outstrip his or her moral and intellectual resources.

Both knowledge and reflectiveness are the bases for making a wise or good judgment. "Good judgment," as Szawarski defines it, "is a capacity of perceiving and deciding which value (or rule) is overriding in a conflict of values. It is also," he adds, "a capacity of applying general knowledge or general rules in particular situations" (2004, p. 186). A wise or good judgment often involves perceiving which value, among a set of competing values, applies to a particular case, and then making the most appropriate decision based on that value.

Often a very important value may be transgressed or inverted, resulting in a decision that would not be considered good or wise under alternative circumstances. As an example, Szawarski cites the general values of life (and also health) as good and death (and also disease) as bad. But, in medical care there are times when death is not bad but good; and a patient must be allowed to die in peace and with dignity rather than to be kept alive, through extraordinary means, in pain and ignobly. A wise or good judgment involves recognition of human limitations and possibilities, especially in terms of good ends and of appropriate means to those ends (Kekes, 1983). Without such recognition, wisdom devolves into platitudes.

Finally, wisdom also relies on trusting the beliefs that one accepts and the choices and preferences they inspire (Lehrer, 1997; Szawarski, 2004). This trust of one's beliefs, choices, and preferences is based on the fact that one's ability or capacity to reason correctly and accurately and to make good judgments is trustworthy. Even though one is limited in terms of one's knowledge and cognitive capacity, one must, at some point, trust that they are adequate to understand a difficult situation and to make a good and wise decision as how to proceed *vis-à-vis* that situation. Without such self-trust, one "can neither construct, nor critically evaluate the structure, content, coherence and practical implications of that general pattern of [one's] world defining values and beliefs" (Szawarski, 2004, p. 187).

Self-trust is the basis for a life of reason and wisdom. "I trust myself in what I accept and prefer, and I consider myself worthy of my trust in what I accept or prefer. Acceptance and preference are, after all," according to Keith Lehrer, "my best efforts to obtain truth and merit, and if they are not worthy of my trust, then I am not worthy of my trust, and reason is impotent" (1997, p. 5). Without self-trust wisdom again devolves into platitudes and the only path is skepticism, which Lehrer claims is "sterile."

Szawarski (2004) applies these traits of wisdom to medicine and the healing professions. First he distinguishes between medical and clinical knowledge, with the former derived from scientific knowledge and the latter from the individual patient. The wise physician is one who demarcates between them and in each medical case he or she "should be able to assess properly what the real importance of things is" (Szawarski, 2004, p. 191). Of course, this assessment depends on the physician's reflectiveness upon both medical and clinical information. Only a proper assessment of such information can lead to a good or wise clinical judgment.

For Szawarski, a physician "cannot acquire and develop good clinical judgment without gathering some experience and that is possible only through methodical and meticulous studies of [his or her] patients. In this sense," he adds, "clinical judgment is indeed a fundamental principle of the art of medicine and involves several more specific arts such as: the art of logical and critical thinking, the art of seeing and understanding the meaning of signs and symptoms, the art of communication, and the art of collecting and interpreting clinical data" (2004, pp. 191–192). Finally, a physician must trust his or her medical and clinical knowledge, reflection on that knowledge, and judgment based on it, or the physician is simply impotent in his or her trade. Moreover, self-trust has a therapeutic value: "If you do not trust yourself, you cannot expect that your patient will trust you" (Szawarski, 2004, p. 192).

For the development of wisdom, then, *pathos* is necessary to transform facts, objective knowledge, and subjective information into wise judgments. As an authentic and a genuine way of being in the world, *pathos* makes accessible the necessary and sufficient power or force to transform biomedical facts into wise clinical insights. Lonergan recognizes five features of this transformation:

> It is *heuristic*, for it brings to light the relevant data. It is *ecstatic*, for it leads the inquirer out of his original perspectives and into the perspectives proper to his object. It is *selective*, for out of the totality of data it selects those relevant to the understanding achieved. It is *critical*, for it removes from one use or context to another the data that might otherwise be thought relevant to present tasks. It is *constructive*, for the data that are selected are knotted together by the vast and intricate web of interconnecting links that cumulatively came to light as one's understanding progressed (1992, pp. 188–189).

Pathos allows the physician and patient to interpret the biomedical facts for a particular patient with respect to the general knowledge and information available through the biomedical sciences and then to negotiate a treatment plan, in light of what is best and good for the patient in terms of the patient's values and needs. It is the affective basis for empathic insights into a patient's suffering and for motivation to relieve that suffering. "Feelings for others provides," according to Rhodes, "compassionate insight into what is required and motivates us to muster the required effort to meet the genuine needs that morally demand our response" (1995, p. 442). *Pathos* reflects the very essence of human nature *vis-à-vis* human knowing, in making *possible* wise decision and action.

3.3 Love

What is love? Unfortunately, like wisdom love is not easily defined and has a multitude of meanings: "The word proves indispensable but notoriously imprecise" (Outka, 1992, p. 1017). Traditionally love is considered a feeling or an emotion. Definitions based on this understanding of love, envision it as an affective disposition or emotional state. For example, the British philosopher, Henry Sidgwick (1838–1900), defined love as "primarily a pleasurable emotion, which seems to depend upon a certain sense of union with another person" (1962, p. 244).

Edward Vacek (1994) has identified four components to the structure of love. The first is an openness of the heart, in that humans are made to love. Both the lover and the beloved must have open and receptive hearts. The next component is that the lover is conscious of the beloved's value. "Love," according to Vacek, "is an emotional cognition directed toward the whole value of the beloved" (1994, p. 44). The third component is that the lover is affected or changed by the beloved's value. The final component is the lover's response to the beloved's value. "In sum," concludes Vacek, "love is an actively receptive movement of the heart that creatively enhances the value of both the lover and the beloved through the union that affirms their respective dynamisms" (1994, p. 66). The ultimate goal is the full expression of both agents in a loving relationship.

Traditionally, there are several types or aspects of love. The ancient Greeks had several separate words for the notion of love, just as they did for wisdom, including *eros*, *philia*, and *agape* (Nussbaum, 2001; Outka, 1992). "Ancient Greek *erôs*," notes Martha Nussbaum, "is not mutual: it is an intense erotic longing for an object, which includes the thought of possession and control of the object" (2001, p. 164). Erotic love is not necessarily sexual as it is intense and passionate and often only one-way or not reciprocal. In contrast to *eros*, *philia* is both reciprocal and mutual in nature. *Philia* consists of a fondness for or a liking of the beloved and is best represented by friendship. *Agape* is the New Testament love for God and one's neighbor. It is a self-sacrificing or altruistic love, in that it is not dependent on the beloved's social status or monetary worth. "The basic feature of *apage*," claims Alan Mermann, "is regard for others" (1993, p. 270).

Besides these types others have been identified, such as *libido*, *storge*, and *amor sui* (Jackson, 1999; Mermann, 1993). Libido is a sensual love for the beloved, especially love that is driven by sexual reproduction. "*Libido*," according to Mermann, "is a vital part of any significant love relationship. Delight and desire and union with the objects of out loves are central to our knowing what love is" (1993, p. 270). Finally, *storge* is "affection for the less than fully personal" and *amor sui* is "self love" (Jackson, 1999, p. 54).

Which of these types of love is best for medical practice? Mermann insists that all three traditional Greek forms of love—*eros*, *philia*, and *agape*—play an important role in medical care, although pride of place goes to *agape*. "Caring for others in sickness and in health," according to Mermann, "offers full possibilities for the expression of our loves" (1993, p. 272). For example, the passion associated with *eros* can heighten the physician's technical skills and creativity to perform according to the best means for the patient. Again, *philia* is required for a robust medical practice, especially as expressed in terms of friendship with colleagues and others concerned for public health.

However, according to Mermann, "it is *agape* that will define the good health care professional. A life lived out for others, and a view of the needs of others as a welcome site for giving of our own resources, will determine us" (1993, p. 272). It is *agape* that under girds the other forms of loves and transforms them to achieve even greater benefits for the patient, as well as for the physician. "Agape, the love that qualifies all other loves," exhorts Mermann, "can define the life and the work of both the caregiver and the care seeker" (1993, p. 273).

Besides these more traditional forms of love, other forms have been proposed to describe the role of love in medical practice. For example, Lynn Underwood combines "compassion" and "love" to explicate clinical love. Compassion is a powerful emotional disposition that allows a person to pull along side a suffering other, in order to help that person. "Compassion," according to Lawrence Blum, "is not a simple feeling-state but a complex emotional attitude toward another, characteristically involving imaginative dwelling on the condition of the other person, an active regard for his good, a view of him as a fellow human being, and emotional responses of a certain degree of intensity" (1980, p. 509).

Importantly, compassion is not just heroic but mundane. It is often composed of simple common acts of mercy and understanding, e.g. "ways of listening and supporting others that [are] hard to describe because they of their seeming ordinariness" (Mitteness, 2001, p. 6). The root of compassion is our shared humanity; the realization that bad fortune may strike any of us at any time (Blum, 1980; Oreopoulos, 2001). For a physician or other healthcare provider, compassion is just as essential for medical practice as technical competency.

The combination of compassion and love "describes sympathy towards the other, in a way that is caring, respectful, and appropriately emotionally engaged, which leads to appropriate action in service of the other person" (Underwood, 2004, pp. 484–485). Compassionate love on the physician's part allows the patient to manifest a fullness of life and illness. "A person acting with compassionate love," according to Underwood, "perceives the suffering, needs, or potential of another, and chooses to act in ways that can better the condition of the other, placing the other's needs in high priority" (2004, p. 484).

Underwood distinguishes several features of compassionate love, including a free choice for the other, an understanding of the other's situation and of oneself, a valuing of the other at a basic level, openness and receptivity to the other, and a heartfelt response to the other. Moreover, proper motivation is critical for full expression of compassionate love, especially in the clinical setting (Underwood, 2002, 2004). One's motive must focus on the other's needs rather than one's own. Thus, the physician who expresses compassionate love "has the capacity to experience the suffering of another and to experience something of the total impact of the illness, that is, the associated fears, the anxiety, and the illness' assault on the whole person, reflected in loss of freedom and the patient's sense of utter vulnerability" (Oreopoulos, 2001, p. 540). A physician so moved cannot help but respond with compassion to the patient's suffering.

As for the conversion of facts, knowledge, and information to wisdom, so *pathos* allows for the transformation of emotionally detached concern and even empathic care to compassionate love. *Pathos*, as a suffering love, is the force that moves or motivates a physician to respond in a genuinely compassionate and selfless manner to a patient's illness experience and the suffering associated with it. *Pathos* as an authentic and a genuine way of being in the world permits physicians to access the necessary and sufficient power or force to transform either the biomedical or humanistic clinical gaze into a compassionate or loving one.

Compassionate love is unrestricted and akin to what Lonergan calls religious love: "Religious love is without conditions, qualifications, reservations; it is with all one's heart and all one's soul and all one's mind and all one's strength" (1979, p. 242). A chief feature of such love is its self-sacrificing nature. *Pathos* empowers a physician to respond to a particular patient in a deeply loving manner, to provide a treatment plan in light of what is best and good for the patient *vis-à-vis* the patient's values and needs. *Pathos* reflects the very essence of human nature in terms of human compassionate love, in making loving decision and action *possible*. Thus, *pathos* is the ultimate source that allows for a compassionate and loving medicine of authentic persons.

4 Summary

What, then, is medicine? The answer to that question depends upon one's perspective (Black, 1968). "Medicine," from the physician's perspective, "is very much what he cares to make it" (Black, 1968, p. 1). In other words, medicine is a profession in which the physician can specialize. "Medicine," from the patient's perspective, however, "should mean simply help in sickness—help which comes promptly, is given willingly, which is manifestly efficient, and which does not cripple him financially" (Black, 1968, p. 2).

There is also a third perspective, which consists of a broad and a narrow view. The broad view consists of medicine as an institution, arranged in terms of healthcare workers and their physical and intellectual resources, which are marshaled to treat the patient's disease. The narrow view is concerned "with those disturbances of well-being which are dealt with by physicians, rather than by surgeons or other specialists" (Black, 1968, p. 3). For instance, the narrow view may be associated with "internal medicine." Finally, there is a fourth perspective, in which the patient and physician act together to make up what is called medicine. With respect to that perspective, Pellegrino and Thomasma (1981a) provide one of the better known and discussed answers to the question of medicine's nature that incorporates the views of both the patient and physician. They embed their approach to the question of medicine's nature in terms of "clinical interaction," since medicine is a particular type of relationship—a healing relationship.

Pellegrino and Thomasma (1981a) explicate medicine's nature in terms of four modes. The first is responsibility, which, although mutual, poses a greater burden for the physician who has greater medical knowledge and expertise. Thus, the relationship is asymmetric in terms of responsibility. Medicine's next mode is trust, especially the patient's trust in the physician's skill and practice. Again, however, the basis of trust is an asymmetric relationship between physician and patient in which the healing relationship begins with the physician's extension of a "helping hand." The third mode is decision orientation or clinical judgment, which depends upon the physician's style of reasoning and the patient's values. The final mode is etiology, in which the physician is to identify the causal factors for the patient's disease.

Based on these four modes, Pellegrino and Thomasma (1981a) distinguish medicine's unique nature or form—a form composed of several dimensions that separate medicine from other disciplines. The first dimension involves the personal nature of medicine, comparable to Martin Burber's I-Thou relationship. The next dimension is mutual consent, in which the patient seeks help and the physician offers it. The third dimension is the craft-like nature of medicine. Again, this dimension reveals the asymmetric nature of the healing relationship. "The therapeutic intent of the clinical relationship," according to Pellegrino and Thomasma, "tends to place the patient in a passive role *vis-à-vis* the physician. The latter is expected to acquire and maintain a superior fund of knowledge and skill. Even the diagnostic ability of patients which brought them to the relationship is suspended by a more scientific attempt to categorize the complaint and search for causes"

(1981a, p. 72).[14] The next to last mode is didactic, in which both physician and patient teach each other.

Although the above modes are features of medicine, they do not necessarily distinguish medicine from other disciplines. It is the final mode, which demarcates medicine from other disciplines. That mode is the *telos* or goal of medicine, which includes both motives and ends. The motives center on the illness itself, with which the patient cannot cope effectively and requires assistance, while the ends consist of "a personal and organic restoration to a former or better state of perceived health or well-being" (Pellegrino and Thomasma, 1981a, p. 72).

The "personal" and "organic" dimensions of the restoring separate medicine from all other helping professions. "The distinguishing feature of medicine, therefore," claim Pellegrino and Thomasma, "is that it is a *craftsmanship that involves healing of the body with the body*" (1981a, p. 73). In other words, it is the direct physical intervention, such as touching, that makes medicine unique. Medicine, then, involves healing of a specific patient's body through the use of the physician's body, i.e. "the curative intent is also corporeal, not spiritual or mental" (Pellegrino and Thomasma, 1981a, p. 73).

Medicine is a "*tekné iatrikê*" or craft-like technique of healing (Pellegrino and Thomasma, 1981a). Importantly, medicine's craft-like nature is based on compassion but a compassion that is exclusively corporeal in nature, i.e. compassion based on "a shared bodily structure." Moreover, medicine's craft-like nature is distinguishable from science, in that medicine attends to the individual patient. Indeed, medicine may be defined as "*a relation of mutual consent to affect individualized well-being by working in, with, and through the body*" (Pellegrino and Thomasma, 1981a, p. 80). Medicine at its root is relational and moral in that it interprets the patient's bodily facts *vis-à-vis* the patient's values. In the end, however, medicine is more a science than an art and focuses almost exclusively on the corporeal rather than the mental or spiritual. "*Medicine as a disciplined body of knowledge*," conclude Pellegrino and Thomasma, "*is a science respecting the perfection of lived bodies concretized by skill in experiencing and effecting connections between corporeal symptoms and remedies*" (1981a, pp. 80–81).

Pellegrino and Thomasma's definition of medicine still labors under the Cartesian dualistic approach to life, which results in a technique that can become lifeless and devoid of passion. Humanistic or humane approaches to medicine attempt to reinstate that passion. For example, Jeanne Achterberg identifies passion as one of the qualities necessary for healing: "Regardless of diagnosis, pain and suffering, or the difficulty of treatment, passion for something—anything—seems to allow one to grow larger than the problem: larger than the fact that a death sentence may accompany the diagnosis" (1996, p. 60). Passion—in terms of its root as *pathos*—is strong motivation not only for the patient *vis-à-vis* healing but also for the physician

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[14] Pellegrino and Thomasma acknowledge that the relational asymmetry can be corrected through a Platonic *philia* but "only in an ontological realization by both physician and patient of their mutual share in the human condition" (1981a, p. 72).

vis-à-vis medical practice, especially in terms of professional transformation form physician *qua* medical mechanic to physician *qua* wise and loving healer.

In conclusion, *pathos* is critical for transforming medicine from a technical profession that addresses disease into a vocation that responds with wise and loving compassion to the patient's illness experience and the suffering it brings. True physicians are healers even in the absence of any technology, for they respond not simply to the disease *per se* but to the suffering that cripples not just the patient's body but also his or her life. Passionate physicians do not abandon their patients simply because no standard protocol is available. "The truly wise [and loving] response to suffering," according to Philip Overby, "may not be the righteous, indignant call for more science but acknowledgment that no matter the disease, the physician pledges to see the patient through to the end—come what may, cure or no cure, albeit with the best available resources at the present time" (2005, p. 22).

Medicine at its very root is centered in *pathos*, both the patient's suffering and the physician's suffering. "We all hurt from the task of living life;" observes Achterberg, "we all seek help for our suffering" (1996, p. 58). For contemporary medicine to resolve its quality-of-care crisis, it must connect with its *pathos* in terms of both the patient's suffering from illness and the physician's suffering to heal that illness.

Glossary

Abduction:	A form of inference in which the best hypothesis is chosen to account for the evidence.
Absolutism:	The principle that there are universal or objective standards by which to assess or judge propositions, especially moral propositions.
Aesthetics:	The philosophical study of the nature of beauty.
Altruism:	The virtue of selfless concern and behavior for another's welfare, even if detrimental to one's own.
A posteriori:	Reasoning from observed facts or evidence; knowledge based on experience.
A priori:	Reasoning from self-evident principles; knowledge that is innate or based not on experience.
Autonomy:	The ethical principle of self-rule or self-determination, involving often uncoerced and informed decisions.
Axiology:	The philosophical study of the nature of value.
Beneficence:	The ethical principle that involves the moral duty to benefit or to do good for another.
Casuistry:	An ethical theory involving case-based instead of principle-based reasoning or deliberation.
Causation:	The notion that phenomena are the result of antecedent events and forces.
Coherentism:	The doctrine that a proposition's truth depends upon its coherence with other well known true propositions.
Consequentialism:	An ethical theory stating that the consequences of an action are the bases for deliberating about its moral nature.
Constructivism:	The idea that knowledge is produced and accepted through social means.
Dasein:	Heidegger's term for a being constituted by temporality, who interprets the meaning of Being temporally.

Deduction:	A form of inference from general principles to particulars.
Deontology:	An ethical theory stating that actions, rather than their consequences, are the bases for moral deliberation.
Determinism:	The notion that actions, especially the actions of people, are not free but necessarily governed by antecedent causes or events.
Dualism:	The philosophical doctrine that there are two components to everything, such as mind and body or good and bad.
Egoism:	An ethical theory stating that individual self-interest is the basis for one's behavior and morality.
Emergentism:	The idea that entities or their properties arise from lower levels but are substantively apart from them.
Emotivism:	An ethical theory in which morality is based on one's personal feelings and desires.
Empathy:	The ability to intuit the feelings of another and to comprehend them.
Empiricism:	The notion that the origin of knowledge is in sense perception and experience.
Epistemology:	The philosophical study of knowledge, both in terms of its discovery and justification.
Ethics:	The philosophical study of morals, principles, and duties associated with human behavior and actions.
Ethos:	The Greek notion for character of a person or community.
Existentialism:	The philosophical study of phenomena from one's personal experience or perspective, such that meaning is constructed or created rather than discovered or imposed authoritatively.
Folk psychology:	A theory in which behavior is analyzed and defined in terms of the commonsense or everyday understanding of mental states.
Foundationalism:	The idea that knowledge is established or justified with respect to a set of basic beliefs.
Holism:	The notion introduced by J.C. Smuts in the early twentieth century that wholes are the predominant units in nature.
Humanism:	The philosophical position that asserts the dignity of people and that truth is obtainable through human means.
Idealism:	The doctrine that reality is simply a mental construct or an idea and has no independent existence apart from the mind.
Induction:	A form of inference from the particular to the general.
Innate:	The notion that individuals have knowledge, whether positive or moral, from birth.

Instrumentalism:	The pragmatic idea that knowledge is not necessarily true or false but useful or instrumental.
Intuitive:	The notion that knowledge, whether positive or moral, is directly apprehended from one's perceptions.
Justice:	The ethical principle to act fairly, especially in the distribution of benefits and burdens or risks (distributive justice).
Lifeworld:	A concept introduced by Edmund Husserl that refers to the world of experience prior to theoretical analysis.
Logos:	The Greek term for word or reason and is used traditionally by philosophers to denote rationality.
Materialism:	The philosophical doctrine that reality is composed only of matter.
Mechanism:	The structure of various, sequential parts that compose the operation of a system.
Metaphysics:	The philosophical study of first principles that underlay notions such as substance, time, being, and causation.
Monism:	The idea that there is only a single substance, reality, idea, force, or principle that is responsible for phenomena.
Naturalism:	The doctrine that only the natural world exists and that only natural forces and entities are responsible for phenomena.
Naturalistic fallacy:	A formal fallacy that infers ethical obligations from natural facts or considers what is natural to be good.
Nonmaleficence:	The ethical principle not to inflict intentional harm or injury on another.
Normative:	The ethical notion that there are norms or standards for regulating actions or behavior.
Objectivity:	The state of being factual or mind-independent and not biased by desires or feelings.
Ontology:	The metaphysical analysis of being or the nature of existence.
Organicism:	The idea that natural phenomena have a basic organic structure.
Pathos:	The state of being that grounds all possible wise and loving action.
Phenomenology:	The concrete rather than theoretical study of phenomena.
Physicalism:	The notion that all phenomena are explicable in physical terms.
Platonism:	The philosophical position which holds that abstract entities exist.

Pluralism:	The philosophical doctrine that there are multiple substances, ideas, forces, or principles responsible for phenomena.
Positivism:	An approach to epistemology in which knowledge is established through experience and not through metaphysical speculation.
Presupposition:	An assumption or a background belief made in order to investigate phenomena.
Rationalism:	The notion that knowledge originates through the exercise of reason alone, without the aid of sense-experience.
Realism:	The doctrine that entities and forces exist that are independent of human perception or thought.
Reductionism:	The idea that complex phenomena are explainable in terms of primitive or basic phenomena.
Relativism:	The principle that judgments of propositions, especially moral ones, are relative to cultural and social standards.
Situationism:	An ethical theory stating that moral judgments are context dependent.
Subjectivity:	The state of being governed by one's own feelings or personal orientation.
Supervenience:	A relationship in which change in a higher level property depends upon change in a lower level property.
Sympathy:	The capacity to share the feelings of another.
Teleology:	The philosophical doctrine that natural processes unfold towards some end or goal (*telos*).
Utilitarianism:	An ethical theory stating that an action is moral if it brings about the greatest amount of utility (or happiness) for the greatest number of people.
Value:	The intrinsic or extrinsic worth of something.
Virtue:	A moral or intellectual quality of a person.
Vitalism:	The notion that biological life is due to special vital, apart from physical or chemical, forces.
Worldview:	A general philosophical perspective from which the world is understood or viewed.

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