Research Article

ONTOLOGY TO SYMBOLIC REALITY OF MEDICINE: VIEW FROM CRITICAL MEDICAL SOCIOLOGY

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ARTICLE INFO	ABSTRACT
	Ontology (philosophy of medicine) is currently perceived as the solution of first resort for all problems related to biomedical intervention and the use of description logics is seen as a minimal requirement on adequate ontology-based systems. Contrary to common conceptions, however, description logics alone are not able to prevent incorrect representations; this is because they do not come with a theory indicating what is computed by using them, just as classical arithmetic does not tell us anything about the entities that are added or subtracted. In this paper we shall show that ontology is indeed an essential part of any solution to the problems of medical terminology – but only if it is understood in the right sort of way. Modern socio-cultural studies of medicine demonstrate the symbolic character of much of medical reality. This symbolic reality can be appreciated as mediating the traditional division of medicine into biophysical and human sciences. Comparative studies of medical systems offer a general model for medicine as a human science. Medicine's symbolic reality also forms a bridge between cultural and psycho-physiological phenomena; the basis for psychosomatic and socioso-matic pathology and therapy. This in turn becomes a central problem for medical sociological theory and for a philosophical reinvestigation of medicine.

INTRODUCTION

Bridgman recognized, of course, that the major work of the scientist is to insure that the answer claimed to be correct is indeed correct. But in the course of seeking answers, the scientist is free to use whatever method will produce the correct answer and is not to be constrained by what any outside observer might declare about the proper methods of science. Bridgman offers the oft-quoted aphorism, "Science is what scientists do." While the claim that "science is what scientists do" does get us to consider the disparate activities and methods that constitute science, it is, perhaps, a bit disingenuous. It likely will not satisfy philosophically minded people. Indeed, in his one-page essay, not to mention his 1927 book on the logic of modern physics, Bridgman is himself engaging in philosophical reflection about science. Science may be "what scientists do," but it is up to philosophers to help scientists see just what they are doing. Philosophers continue to ask questions about what science is and may even ask meta-questions about what the philosophy of science aspires to achieve. The question we shall address here is, what is the philosophy of medicine? This question continues to be vexing for two fundamental reasons. First, it is no easy task to define

philosophy. Philosophers go about philosophizing in various ways as a result, definitions, especially those that attempt to be interesting or profound, are controversial (Quinton 1995). Many approaches to philosophy have become so technical that they are all but incomprehensible even to philosophers in other fields. Second, the borders of medicine are not readily marked. Medicine is the encounter of one who suffers from disease with one whose goal is to restore health. Yet the complexity of this encounter far exceeds its simple description. Medicine is sometimes taken broadly to include the work not only of physicians, but also of nurses, physical therapists, radiology technicians, and so on. In other words, "medicine" is a kind of shorthand for "health care." At other times medicine is taken narrowly as what physicians do, as when we accuse an imposter of practicing medicine without a license. Medicine is commonly described as both an art and a science. This is an attempt to describe the fact that medicine essentially involves both the art of the encounter between patient and healer and the science that forms the basis for the healing action. Medicine "involves a cognitive art of bodily work which must concretize and individualize its knowledge" (Pellegrino and Thomasma 1981, p. 99). Just how this is done remains unclear. The usual distinction between the theoretical and practical science of

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medicine has been criticized by Hucklenbroich (1998), who argues that the methodology of medicine consists of two separate methodologies: a research methodology and a clinical methodology. Although there has been a lot of work on the former, there is no generally agreed-upon model for such things as clinical decision making and problem solving. Furthermore, there is no general agreement on what constitutes the proper goals for medicine. Curing disease, promoting individual health, and promoting public health may come to be at odds with one another. Perhaps even more significant is that social problems are increasingly "medicalized."Medicine should not define its goals so narrowly as to exclude important matters of health, but neither should it define its goals so broadly that all social and political means to increase health become included in the practice of medicine (Nordin 1999). Nonetheless, social and political conditions have significant bearing on health, and so drawing a line between the medical and the sociopolitical will always be a challenge. Certainly medicine is about healing, but the question of which healing methods count as medicine remains controversial. Furthermore, much medical research does not directly pursue healing, but rather seeks to understand biological function. Whether that is part of medicine or a separate "medical science," or even just a biological science, is not a settled issue. It is hard to say whether such uncertainties have led some to deny the existence of the philosophy of medicine, relegating philosophical reflection on medicine either to bioethics or to philosophy of science. Still, given the numbers of publications overtly professing to be about philosophy of medicine, the field has not achieved the status of philosophy of science or philosophy of law, for example. Returning to the question at hand, offer this answer: philosophy of medicine is what philosophers of medicine do. This is not meant to be disingenuous; neither is it meant to be a strict definition. It is, rather, an attempt to help us see the breadth of the philosophy of medicine. If philosophy of medicine is what philosophers of medicine do, what makes people philosophers of medicine is that they do philosophy of medicine. We seem to be stuck in a circle, but this may be no worse than trying to say exactly what science is by looking at what scientists do. The problem is delineating just what philosophers of medicine do that constitutes a discipline of study. I believe that philosophy of medicine ought to include the breadth of philosophical reflection on the breadth of the subject matter related to medicine. Facing the other side of the circle, we come to the other perplexing question: who are philosophers of medicine? Philosophy of medicine, broadly construed, is rightly considered to be the provenance of more than just professional philosophers. Although the view presenting is, in a sense, operationalist, it is not Bridgman's operationalism. It is adopted not for positivist, linguistic, or narrowly epistemic reasons, but rather in the spirit of Aristotle's insights into the practical implications of dealing with inexactness.

Arthur Caplan (1992) denied that the philosophy of medicine exists, although he lamented the situation. His position and some responses to it are worth exploring a bit. Caplan calls medical ethics, bioethics, health policy and medical aesthetics examples of philosophy and medicine, but he sees philosophy of medicine to be something quite different. He gives a stipulative definition: "The philosophy of medicine is the study of ontological, epistemological, metaphysical and methodological dimensions of medicine; therapeutic and experimental; diagnostic, therapeutic, and palliative" (p. 69). Certainly these studies should qualify as philosophy of medicine. Given the prominence of bioethics, Caplan does well to point out that philosophy of medicine is something different. But why should philosophy of medicine be limited in this particular way? If ethics and aesthetics are recognized as legitimate parts of philosophy, there is no reason to exclude medical ethics and medical aesthetics from philosophy of medicine. Perhaps the intent is simply to emphasize that medical ethics does not exhaust philosophy of medicine. That is a point still worth emphasizing, but it does not justify the exclusion of legitimate parts of philosophical reflection from the philosophy of medicine. Caplan's point about the nonexistence of philosophy of medicine as a field has more to do with the way he understands a field. On his account, a field must (1) be integrated into a cognate area of inquiry, (2) have a canon, and (3) have certain problems that define its boundaries (pp. 72–73). He finds these requirements lacking for philosophy of medicine. Others, however, have argued that philosophy of medicine is a developing field that does, in fact, have at least the potential to meet all of Caplan's requirements (Velanovich 1994). A good case can be made that the requirements of a canon and defining problems are met for philosophy of medicine. Edmund Pellegrino (1998) has argued that there is a field of philosophical inquiry that "can be termed properly the philosophy of medicine" (p. 315). He speaks of four "modes" of philosophical reflection on medicine. First, philosophy and medicine is a dialogue between the disciplines, which both retain their identities as distinct disciplines. The dialogue might, for example, compare and contrast methods of study or look for similarities or differences in subject matter or mutual influences. Second, philosophy in medicine is the application of recognized branches of philosophy to medical matters. For example, the diagnostic process might be examined for its logic, or the concepts of health and disease analyzed for their metaphysical presuppositions and epistemological status. Third, medical philosophy, the vaguest of the four modes, consists of "informal reflection on the practice of medicine" about such things as "diagnostic artistry" or the doctor-patient relationship. Medical philosophy also includes the writings "based in the clinical wisdom of reflective clinicians" that serve as sources of "inspiration and practical knowledge for conscientious clinicians" (pp. 324–25). Finally, philosophy of medicine, proper, is concerned only with what is "peculiar to the human encounter with health, illness, disease, death, and the desire for prevention and healing" (p. 327). Philosophical concepts are studied only insofar as they relate to the human encounter with somatic or psychological well-being and dysfunction. Thus, the object is not merely analysis of concepts or scientific understanding of medical matters, but rather an understanding of what medicine is as experienced in the encounter of patient and physician. While Pellegrino's analysis sheds valuable light on the various modes of interaction between philosophy and medicine, it limits philosophy of medicine too much. I have favored a broader view of philosophy of medicine as being closer to what is actually being done by philosophers reflecting on medicine (Stempsey 2004). This view is akin to the model described by Schaffner and Engelhardt (1998). They see philosophy of medicine as "encompassing those issues in epistemology,

axiology, logic, methodology and metaphysics generated by or related to medicine."This includes medical ethics, although it has become such a large topic that it deserves a separate discussion. Concepts of health and disease have been a "defining problem" for contemporary (and classical) philosophy of medicine, but philosophy of medicine includes any philosophical reflection on medicine. This includes investigations into the logic of diagnosis, prognosis, and evaluation of therapies, and philosophical discussion of the causation of disease. This is closer to what Pellegrino calls philosophy in medicine. Pellegrino admits that there is no essential conflict between his own view of philosophy of medicine and philosophy in medicine. In fact, much of his own work has dealt with matters of his philosophy in medicine. Medicine, rather, encompasses an array of clinical and research activities that ultimately aim at helping the suffering patient. These activities, however, need not necessarily arise from the very specific foundation Pellegrino requires for classification as philosophy of medicine. In my view, any philosophical reflection, whether it seeks to analyze the logic of diagnosis, to describe the phenomenology of suffering, or to seek the wisdom required to be a good physician, deserves to be counted as philosophy of medicine. The one criterion of Caplan that remains problematic for philosophy of medicine is its integration into philosophy. The reasons for this are not altogether clear, but probably are best explained by the dominance of bioethics and the relatively small number of people working in the field (if it is a field) that goes beyond bioethics (Stempsey 2007).Another contributing problem is that philosophy of medicine is being done by a variety of different people, who may not identify themselves primarily as philosophers of medicine.

These philosophical questions are sufficiently interesting and difficult to attract a large number of philosophers for many years to come, and I hope that with time the challenges mentioned above will be met. I would like to take a small step in this direction by discussing one of the metaphysical questions raised by medicine: what is the ontological nature of the diagnostic entities-such as cystic fibrosis, Alzheimer's disease, congestive heart failure-that medicine considers both in research and in clinical practice? I ask this question for two reasons. First, it is philosophically interesting. For thousands of years, philosophy has been asking what is really out there. I want to know what is really out there in the clinic. For those who do not share my curiosity about this question, there are practical reasons for considering this a pressing issue. In any domain, the types of questions one can ask, and the answers one can expect, depend crucially on the nature of the object of the questions. One's epistemic attitude towards an entity (construing this term very broadly) will differ depending on whether one thinks the entity is scientifically real or socially constructed. Thus, the ability to investigate many of the epistemic and methodological questions philosophers of medicine may want to ask depends on understanding the metaphysics underlying them. To put our question more concretely, when a physician tells a patient "You have cystic fibrosis," or when a researcher says "I am conducting a study of a new therapy for cystic fibrosis," what do they mean? What is the nature of this cystic fibrosis they refer to? A thorough review of previous attempts to address the nature of diagnostic entities and their shortcomings would require more than a

single journal article. I can only provide the most cursory sketch of these attempts, along with the bare outlines of some of their more serious problems (Simon n.d.). I will follow this sketch with a consideration of a new approach to medical ontology .The cursory sketch is as follows. Those who discuss ontology in medicine can be divided into categories familiar from philosophy of science, namely, realists and anti-realists. By realists, roughly, those authors who claim that whatever their precise nature, the diseases we recognize (or at least the diseases an ideal medicine would recognize) constitute fundamental parts of the underlying structure of the natural world that we discover, just as elsewhere realists claim that we discover the elementary constituents of the physical world (such as quarks or electrons). In other words, individual patients have real tokens of a real type of disease entity. By anti-realists, again roughly, those who consider diseases to be constructed, not discovered, entities-whether they are constructed, as per Engelhardt (1984), by scientists along scientifically pragmatic lines or, per Illich (1976), by less scientific groups with more sinister aims. (See Tauber 2008, this issue, for a discussion of constructivism.) What is wrong with these options? On one level, each is vulnerable to philosophical attacks, some of which are familiar from older debates in the philosophy of science, and which most would agree result in a stalemate. Rather than hinting at potential flaws in the various positions, a better way to see the need to move beyond realism and anti-realism is to consider what I take to be the respective motivations of realists and anti-realists for their positions .These motivations are not meant to provide arguments for or against either side (although, suitably modified, they may serve as such), but rather to appeal to intuitions. The intuitions of both sides are compelling and-if we stick to the realist/anti-realist dichotomy-incompatible. If we want to honor both sets of intuitions, we must find a new approach. The medical realist shares the primary intuitions of other scientific realists. Diseases are real in a commonsense way: they exist as such. If diseases were not real, we could not successfully study and treat them as in fact we do; furthermore, when one treats two patients with a given diagnosis, one appears to be treating two cases of the same disease in two different patients (Temkin 1961). Opposing these intuitions, the anti-realist notes that while talk of reified disease entities works well on paper (or in PowerPoint), this abstraction is difficult to maintain when confronting actual patients. Each patient and each case is unique in essential ways, and no two patients have instances of precisely the "same" disease in the way the realist requires. Rather, patients are arranged in diagnostic categories that are constructed by humans based on criteria that may be related to our methods for gaining knowledge about our patients' conditions, our means for treating them, or other factors that humans use to categorize each other. (Gräsbeck (1984) provides perhaps the clearest statement of this approach. Engelhardt (1984) takes a similar approach, while Illich (1976) is more radical in the basis he suggests for our constructed nosography.) Ontology is currently perceived as the solution of first resort for all problems related to biomedical terminology, and the use of description logics is seen as a minimal requirement on adequate ontology-based systems. This is because description logics, on current conceptions, occupy the sweet-spot between maximal expressive power on the one hand and computer tractability on the other. Most ontology-based

systems in healthcare accordingly conceive ontology as a mere knowledge representation tool and thus they adhere to the computer science understanding of the term, tracing over the more venerable philosophical understanding of ontology as a science of the types of entities and relations in reality. Ontological engineering without ontological theory may, certainly, suffice for developing terminologies for data-entry systems under which users need simply to select terms while browsing through a hierarchy. But such an approach is far from meeting the requirements imposed by information systems that need to deal with grammatically complex patient records and other documents in (multiple) natural languages. In such cases, the required solution must at least contain (1) knowledge about terms and how they are used in valid constructions within natural language; (2) knowledge about the world, i.e. how the referents denoted by the terms interrelate in reality and in given types of contexts. It must contain also (3) an algorithm that is able not only to calculate a language user's representation of that portion of the world that is described in the pertinent utterances but also (4) track the ways in which people express what does not represent anything in reality. For all of these purposes the required solution must be grounded in an ontological theory. In this essay we will defend our thesis by first pointing out the problems which arise in existing medical terminological systems because they violate these principles, and then show how these principles are applied in one large-scale biomedical ontology for multilingual natural language understanding.

The world-wide attention received by the Semantic Web project as a more powerful incarnation of the current web has led to a renewed interest in "ontology", a term whose initial currency in the information systems domain was associated primarily with the idea of ontologies as standardized classification schemes designed to advance translation between databases. It is important to note, however, that there are two importantly different uses of the term "ontology". Most widespread is Gruber's understanding of an ontology as a description, analogous to a formal specification of a program, of the concepts and relationships that can exist for an agent or a community of agents. The other meaning, the one to which we adhere, sees ontology as a theory of what exists, a theory of the kinds and structures of objects, properties, events, processes and relations in every area of reality . Ontology in this sense rests upon a number of simple principles, which include:

1. Objects, which endure through time, are categorically different from processes, which occur in time;
2. The relation of instantiation (between an instance and its universal) is distinct from the relation of subsumption (between a less general and a more general universal);
3. An entity is distinct from a term used to refer to that entity.

Medicine as a Symbolic Reality

In his "Medicine's Symbolic Reality" essay (1973), by demonstrating medicine as a form of symbolic reality, Kleinman argued that the socio-cultural approach to medicine, particularly the comparative study of medicine, challenge the modern medical theory and "radically remake our understanding of medicine" (p 86).

His argument was informed by the interpretive medical anthropology's perspectives. Interpretive medical anthropology is based on philosophical and analytic traditions committed to understanding culture in terms of symbolic meanings and embodied experience. Accordingly, culture is understood as something to be read and interpreted like a text not just empirically observed and objectively reported. Kleinman, therefore, viewed medicine as consisting of interpretive practices and as symbolic realities. To support his argument, Kleinman mainly did followings: 1) referred to Wittgenstien's metaphor of language, and 2) introduced two major approaches to medicine, and 3) finally demonstrated how medicine is a form of symbolic reality based on the findings of the comparative study of medicine.

First, Kleinman introduced Wittgenstein's metaphor of ordinary language as similar to "a maze of little streets and squares, of old and new houses," as opposed to the "straight regular streets and uniform houses" of scientific language. By using this metaphor, he later suggested that considering medicine as a form symbolic reality allowed one to "rapidly come to think of the medical system as structures somewhat like a language" (p 88). Kleinman then described the differences between two approaches to understand medicine.

The first one is based on medical science or the philosophy of medicine, which emphasizes the biophysical aspect of medicine and views medicine as biophysical reality. The modern medical theory is also based on knowledge limited to medicine's biophysical reality.

The second approach is based on socio-cultural perspectives, which emphasizes socio, cultural, and individual aspect of medicine and views medicine as a socio-cultural system, practice, and a human reality. In this essay, he gave special attention to the cross-cultural, comparative study of medicine. Next Kleinman presented what the comparative study of medicine had found, more specifically the way they recognize medical systems, the experience of illness, medical knowledge, healing, and efficacy of medicine. For example, for medical systems he wrote medical system is "characterized as expression of the cultural loci of power which they utilize to explain and control illness" (p 86). He went on to write, "a given medical system in its socio-cultural context does considerably more than name, classify, and respond to illness … [and] structures the experience of illness and, in part, creates the form disease takes" (p 86). In terms of medical knowledge, he wrote, "medical classificatory schemes are most often not objective descriptions of empirical reality. Rather they reflect healing concerns and the theoretical biases of given cultural and medical ideologies" (p 87). By introducing these findings of the comparative study of medicine, Kleinman ultimately suggested that medicine is a form of symbolic reality or consists of a set of interpretive practices, as he stated, "this symbolic structure is present not only in therapy, where it plays a patent role of mediation, but also in the social construction and cognitive mapping of illness; in other words it is to be found at all levels of the medical system" (p 88).

Socio-philosophical perspective of medicine

The combined ideas of evolutionism, originally Lamarckian, and scientific positivism, affected by a Darwinian bias as we get closer to the end of the century, were crucial for the

forming of Sociology. As it has recently been shown for the case of France, by the last two decades of the nineteenth century practically all social discourse employed a biological or medical rhetoric, which in itself became a Meta narrative. Medicine, on its side, grew in scientific consistency thanks to development of basic biological sciences, such as physiology, microbiology and others, while the broadening of healthcare facilities produced a decently bourgeois way of living for generations of practitioners. In fact, it boasted of being one of the paradigmatic professions of the industrial, liberal society. This notwithstanding, socially eminent practitioners sought also to produce a stronger link with the dominant elite, which they achieved by sharing the same rhetorical facilities. That is, during decades they applied the correspondence biology/society, to describe and to explain social processes in biological terms and from the beginnings of the twentieth century they applied social terms to explain medical matters. The forming of the concept of social disease can help us to produce some examples. The first condition so defined was pauperism, "a congenital social disease". Indeed, mid nineteenth century authors looked at society through a medical gaze that defined "diseases" instead of social disorders. The author responsible for this quotation, Pedro F. Monlau (1808–1871), a reputed hygienist, became a fellow of the Academy of Moral and Political Sciences in 1870, where he read a paper on Social Pathology. A brief study on crime. Again, the same metaphor: any challenging of the order of society (as decided by the ruling class) should be depicted as a disease. In this paper, an argument is made in favour of the death penalty as the elective treatment in case of riots or rebellions. Those were the days of the short lived First Spanish Republic (1870–1872). Later, in a context of political stability, another Hygiene professor of Madrid University sustained that social diseases were "those that are able to influence the physical and moral sides of individuals as well as to distort the social organism"; he then listed prostitution, alcoholism, vagrancy and beggary, gambling, murdering and suicide.10 Accordingly, the prominent surgeon Federico Rubio (1827–1902) included under the same proposition all "public disasters" by any cause - ranking from telluric to zymotic to distortion of social classes-, the "individual vices" (such as alcoholism, nicotism, prostitution and the like) for they impinged upon families and communities, and the "collective vices", which included non-democratic political organisation, ignorance, pauperism and functional disorders as strikes or riots.11 Both Angel Larra (1858–1910, a high Navy medical officer) in Madrid, in 1902, and Ignaci Valentí Vivó (1841–1924, Professor of Forensic Medicine), in Barcelona, in 1905, stuck to the opinion that explained social pathology as a parallel phenomenon to medical pathology; but where Larra considered the sociological trail as a guide to the study of medicine, particularly hygiene, Valentí highlighted the influence of medical rationale on the forming of sociological concepts in the realm of Economics.12 Significantly in both cases they referred to Paul (Pavel) Lilienfeld as source of authority, a partner of René Worms at the International Institute of Sociology, a well known fellow of the social-organismic tendency of fin-de-siècle sociology.

Therefore, the "social" condition impinged over the cause, the number of affected and the collective consequences of any given disease. Positivistic minds favoured taking the road of quantification, which in Spain was facilitated by the opening of the National Civil Register in 1871 (although the publication of the series on the Annual Movement of Population started only in 1902). As Barcelona province and municipality were the leading administrations in implementing such demographic tools, quantitative studies on health became a regular feature of the modern medicine.

Sociological Approach to Health and Medicine

We usually think of health, illness, and medicine in individual terms. When a person becomes ill, we view the illness as a medical problem with biological causes, and a physician treats the individual accordingly. A sociological approach takes a different view. Unlike physicians, sociologists and other public health scholars do not try to understand why any one person becomes ill. Instead, they typically examine rates of illness to explain why people from certain social backgrounds are more likely than those from others to become sick. Here, as we will see, our social location in society-our social class, race and ethnicity, and gender-make a critical difference.

A sociological approach emphasizes that our social class, race and ethnicity, and gender, among other aspects of our social backgrounds, influence our levels of health and illness.

The fact that our social backgrounds affect our health may be difficult for many of us to accept. We all know someone, and often someone we love, who has died from a serious illness or currently suffers from one. There is always a "medical" cause of this person's illness, and physicians do their best to try to cure it and prevent it from recurring. Sometimes they succeed; sometimes they fail. Whether someone suffers a serious illness is often simply a matter of bad luck or bad genes: we can do everything right and still become ill. In saying that our social backgrounds affect our health, sociologists do not deny any of these possibilities. They simply remind us that our social backgrounds also play an important role (Cockerham, 2009).

A sociological approach also emphasizes that a society's culture shapes its understanding of health and illness and practice of medicine. In particular, culture shapes a society's perceptions of what it means to be healthy or ill, the reasons to which it attributes illness, and the ways in which it tries to keep its members healthy and to cure those who are sick (Hahn & Inborn, 2009). Knowing about a society's culture, then, helps us to understand how it perceives health and healing. By the same token, knowing about a society's health and medicine helps us to understand important aspects of its culture.

An interesting example of culture in this regard is seen in Japan's aversion to organ transplants, which are much less common in that nation than in other wealthy nations. Japanese families dislike disfiguring the bodies of the dead, even for autopsies, which are also much less common in Japan than other nations. This cultural view often prompts them to refuse permission for organ transplants when a family member dies, and it leads many Japanese to refuse to designate themselves as potential organ donors (Sehata & Kimura, 2009; Shinzo, 2004). As culture changes over time, it is also true that perceptions of health and medicine may also change. Recall from "Eye on Society: Doing Sociological Research" that physicians in top medical schools a century ago advised women not to go to college because the stress of higher education would disrupt their menstrual cycles (Ehrenreich & English, 2005). This

nonsensical advice reflected the sexism of the times, and we no longer accept it now, but it also shows that what it means to be healthy or ill can change as a society's culture changes.

A society's culture matters in these various ways, but so does its social structure, in particular its level of economic development and extent of government involvement in health-care delivery. As we will see, poor societies have much worse health than richer societies. At the same time, richer societies have certain health risks and health problems, such as pollution and liver disease (brought on by high alcohol use), that poor societies avoid. The degree of government involvement in health-care delivery also matters: as we will also see, the United States lags behind many Western European nations in several health indicators, in part because the latter nations provide much more national health care than does the United States. Although illness is often a matter of bad luck or bad genes, the society we live in can nonetheless affect our chances of becoming and staying ill.

Sociological Perspectives on Health and Medicine

The major sociological perspectives on health and medicine all recognize these points but offer different ways of understanding health and medicine that fall into the functional, conflict, and symbolic interactionist approaches. Together they provide us with a more comprehensive understanding of health, medicine, and society than any one approach can do by itself (Cockerham, 2009). Table 1 "Theory Snapshot" summarizes what they say.

Table 1 Theory Snapshot

Theoretical perspective	Major assumptions
Functionalism	Good health and effective medical care are essential for the smooth functioning of society. Patients must perform the "sick role" in order to be perceived as legitimately ill and to be exempt from their normal obligations. The physician-patient relationship is hierarchical: the physician provides instructions, and the patient needs to follow them.
Conflict theory	Social inequality characterizes the quality of health and the quality of health care. People from disadvantaged social backgrounds are more likely to become ill and to receive inadequate health care. Partly to increase their incomes, physicians have tried to control the practice of medicine and to define social problems as medical problems.
Symbolic interactionism	Health and illness are *social constructions*: Physical and mental conditions have little or no objective reality but instead are considered healthy or ill conditions only if they are defined as such by a society. Physicians "manage the situation" to display their authority and medical knowledge.

The Functionalist Approach

As conceived by Talcott Parsons (1951), the functionalist perspective on health and medicine emphasizes that good health and effective medical care are essential for a society's ability to function. Ill health impairs our ability to perform our roles in society, and if too many people are unhealthy, society's functioning and stability suffer. This was especially true for premature death, said Parsons, because it prevents individuals from fully carrying out all their social roles and thus represents a "poor return" to society for the various costs of pregnancy, birth, child care, and socialization of the individual who ends up dying early. Poor medical care is likewise dysfunctional for society, as people who are ill face greater difficulty in becoming healthy and people who are healthy are more likely to become ill.

For a person to be considered *legitimately* sick, said Parsons, several expectations must be met. He referred to these expectations as the sick role. First, sick people should not be perceived as having caused their own health problem. If we eat high-fat food, become obese, and have a heart attack, we evoke less sympathy than if we had practiced good nutrition and maintained a proper weight. If someone is driving drunk and smashes into a tree, there is much less sympathy than if the driver had been sober and skidded off the road in icy weather. Second, sick people must want to get well. If they do not want to get well or, worse yet, are perceived as faking their illness or malingering after becoming healthier, they are no longer considered legitimately ill by the people who know them or, more generally, by society itself.

Third, sick people are expected to have their illness confirmed by a physician or other health-care professional and to follow the professional's advice and instructions in order to become well. If a sick person fails to do so, she or he again loses the right to perform the sick role.

If all of these expectations are met, said Parsons, sick people are treated as sick by their family, their friends, and other people they know, and they become exempt from their normal obligations to all these people. Sometimes they are even told to stay in bed when they want to remain active.

Physicians also have a role to perform, said Parsons. First and foremost, they have to diagnose the person's illness, decide how to treat it, and help the person become well. To do so, they need the cooperation of the patient, who must answer the physician's questions accurately and follow the physician's instructions. Parsons thus viewed the physician-patient relationship as hierarchical: the physician gives the orders (or, more accurately, provides advice and instructions), and the patient follows them.

Parsons was certainly right in emphasizing the importance of individuals' good health for society's health, but his perspective has been criticized for several reasons. First, his idea of the sick role applies more to acute (short-term) illness than to chronic (long-term) illness. Although much of his discussion implies a person temporarily enters a sick role and leaves it soon after following adequate medical care, people with chronic illnesses can be locked into a sick role for a very long time or even permanently. Second, Parsons's discussion ignores the fact, mentioned earlier, that our social location in society in the form of social class, race and ethnicity, and gender affects both the likelihood of becoming ill and the quality of medical care we receive. Third, Parsons wrote approvingly of the hierarchy implicit in the physician-patient relationship. Many experts say today that patients need to reduce this hierarchy by asking more questions of their physicians and by taking a more active role in maintaining their health. To the extent that physicians do not always provide the best medical care, the hierarchy that Parsons favored is at least partly to blame.

The Conflict Approach

The conflict approach emphasizes inequality in the quality of health and of health-care delivery (Conrad, 2009). As noted earlier, the quality of health and health care differ greatly around the world and within the United States. Society's

inequities along social class, race and ethnicity, and gender lines are reproduced in our health and health care. People from disadvantaged social backgrounds are more likely to become ill, and once they do become ill, inadequate health care makes it more difficult for them to become well. As we will see, the evidence of inequities in health and health care is vast and dramatic.

The conflict approach also critiques the degree to which physicians over the decades have tried to control the practice of medicine and to define various social problems as medical ones. Their motivation for doing so has been both good and bad. On the good side, they have believed that they are the most qualified professionals to diagnose problems and treat people who have these problems. On the negative side, they have also recognized that their financial status will improve if they succeed in characterizing social problems as medical problems and in monopolizing the treatment of these problems. Once these problems become "medicalized," their possible social roots and thus potential solutions are neglected.

Several examples illustrate conflict theory's criticism. Alternative medicine is becoming increasingly popular, but so has criticism of it by the medical establishment. Physicians may honestly feel that medical alternatives are inadequate, ineffective, or even dangerous, but they also recognize that the use of these alternatives is financially harmful to their own practices. Eating disorders also illustrate conflict theory's criticism. Many of the women and girls who have eating disorders receive help from a physician, a psychiatrist, a psychologist, or another health-care professional. Although this care is often very helpful, the definition of eating disorders as a medical problem nonetheless provides a good source of income for the professionals who treat it and obscures its cultural roots in society's standard of beauty for women (Whitehead & Kurz, 2008).

Obstetrical care provides another example. In most of human history, midwives or their equivalent were the people who helped pregnant women deliver their babies. In the 19th century, physicians claimed they were better trained than midwives and won legislation giving them authority to deliver babies. They may have honestly felt that midwives were inadequately trained, but they also fully recognized that obstetrical care would be quite lucrative (Ehrenreich & English, 2005). In a final example, many hyperactive children are now diagnosed with ADHD, or attention deficit/hyperactivity disorder. A generation or more ago, they would have been considered merely as overly active. After Ritalin, a drug that reduces hyperactivity, was developed, their behavior came to be considered a medical problem and the ADHD diagnosis was increasingly applied, and tens of thousands of children went to physicians' offices and were given Ritalin or similar drugs. The definition of their behavior as a medical problem was very lucrative for physicians and for the company that developed Ritalin, and it also obscured the possible roots of their behavior in inadequate parenting, stultifying schools, or even gender socialization, as most hyperactive kids are boys (Conrad, 2008; Rao & Seaton, 2010). Critics of the conflict approach say that its assessment of health and medicine is overly harsh and its criticism of physicians' motivation far too cynical. Scientific medicine has greatly improved the health of people in the industrial world; even in the poorer nations, moreover, health has improved from a century ago, however inadequate it remains today. Although physicians are certainly motivated, as many people are, by economic considerations, their efforts to extend their scope into previously nonmedical areas also stem from honest beliefs that people's health and lives will improve if these efforts succeed. Certainly there is some truth in this criticism of the conflict approach, but the evidence of inequality in health and medicine and of the negative aspects of the medical establishment's motivation for extending its reach remains compelling.

The Interactionist Approach

The interactionist approach emphasizes that health and illness are *social constructions*. This means that various physical and mental conditions have little or no objective reality but instead are considered healthy or ill conditions only if they are defined as such by a society and its members (Buckser, 2009; Lorber & Moore, 2002). The ADHD example just discussed also illustrates interactionist theory's concerns, as a behavior that was not previously considered an illness came to be defined as one after the development of Ritalin. In another example, in the late 1800s opium use was quite common in the United States, as opium derivatives were included in all sorts of over-the-counter products. Opium use was considered neither a major health nor legal problem. That changed by the end of the century, as prejudice against Chinese Americans led to the banning of the opium dens (similar to today's bars) they frequented, and calls for the banning of opium led to federal legislation early in the 20th century that banned most opium products except by prescription (Musto, 2002).

In a more current example, an attempt to redefine obesity is now under way in the United States. Obesity is a known health risk, but a "fat pride" movement composed mainly of heavy individuals is arguing that obesity's health risks are exaggerated and calling attention to society's discrimination against overweight people. Although such discrimination is certainly unfortunate, critics say the movement is going too far in trying to minimize obesity's risks (Saulny, 2009).

The symbolic interactionist approach has also provided important studies of the interaction between patients and health-care professionals. Consciously or not, physicians "manage the situation" to display their authority and medical knowledge. Patients usually have to wait a long time for the physician to show up, and the physician is often in a white lab coat; the physician is also often addressed as "Doctor," while patients are often called by their first name. Physicians typically use complex medical terms to describe a patient's illness instead of the more simple terms used by laypeople and the patients themselves.

Management of the situation is perhaps especially important during a gynecological exam. When the physician is a man, this situation is fraught with potential embarrassment and uneasiness because a man is examining and touching a woman's genital area. Under these circumstances, the physician must act in a purely professional manner. He must indicate no personal interest in the woman's body and must instead treat the exam no differently from any other type of exam. To further "desex" the situation and reduce any potential uneasiness, a female nurse is often present during the exam (Cullum-Swan, 1992).

Critics fault the symbolic interactionist approach for implying that no illnesses have objective reality. Many serious health conditions do exist and put people at risk for their health regardless of what they or their society thinks. Critics also say the approach neglects the effects of social inequality for health and illness. Despite these possible faults, the symbolic interactionist approach reminds us that health and illness do have a subjective as well as an objective reality.

CONCLUSION

Too much (medical) ontology has been designed without keeping linguistic or ontological constraints in mind. That systems designed without any true ontological background suffer from problems hampering their use in advanced natural language understanding applications do not come as a surprise. For a philosophy of symbolic forms or symbolic reality of medicine, however, final truth is forever precluded. As mediated by symbols, truth is given not as a fixed standard, but is attained through a process of elaboration expressed in the historicity of language, myth, religion, art, or science. However, medicine is a cultural outcome of interaction between their cultural, environmental, economic, social, historical and even political situation. The relationship between culture and the medicine status of the population is tightly intertwined and hence it is impossible to understand one without understanding the other. Therefore, a medical sociologist role would be to mediate between health planners and health system on one side, and people, communities on the other.

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