

Disease, Illness, and Ethics

AMNON GOLDWORTH

Disease and illness are terms that are often used interchangeably by physicians and the lay public. But not all usage permits this. For instance, diseases are referred to in terms of entities with etiologies; illnesses are not. We also speak of illness as being the effect or symptom of a disease, but not the converse. In what follows, disease and illness will be treated as distinct concepts.

A concept is a variable. Its meaning emerges in the context of a theory. Thus, the concept of disease is determined by the role it plays in a medical theory. The theory that identifies 200 diseases in Ayurvedic (Indian) medicine, as found in the *Caraka Sambita*, is based on the action of three basic bodily humors: bile, wind, and phlegm. The theory that is found in the *Treatise on Cold-Damage* in classical Chinese medicine identifies diseases caused by external cold factors or what Western medicine refers to as acute infectious fevers. Contemporary Western medicine identifies diseases based on the scientific study of human physiology. This approach is exemplified in *Dorland's Illustrated Medical Dictionary*, 27th edition, in which disease is "any deviation from or interruption of the nor-

mal structure or function of any part or symptom (or combination thereof) of the body that is manifested by a characteristic set of symptoms and signs and whose etiology, pathology and prognosis may be known or unknown" (p. 481).

There are a number of objections offered to purely descriptive definitions. One is that they fail to indicate that diseases are undesirable. This is suggested by the fact that the word "disease" comes from "dis-ease," which is evaluative in nature. But, the identification of and the cause and effect of a particular disease, which are the business of Western medical science, are distinct from our acknowledgment of something as a disease. Medical science studies deviations from the normal in the human organism. These deviations may be judged to be undesirable by society. But, science itself does not contain judgments about the desirability or lack thereof of what it studies. Nor is it necessarily dependent on such value judgments for its pursuit. For instance, the theory of fluid mechanics—the study of bodies in a frictionless medium—was developed by Leonard Euler and Daniel Bernoulli in the 18th century.¹ They provided the basis for the scientific study of the laws of aerodynamics which led to air travel. But the laws themselves are not inherently desirable. Initially, they did not even have

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practical value. A similar gap occurred in the case of the discovery and application of a theory of DNA. Friedrich Miescher discovered DNA in 1869. In 1953, J.D. Watson and F.H. Crick unraveled its double helix structure. Advances in the 1980s made it possible to read the genetic code of DNA, and this led to practical applications such as testing fetuses for genetic diseases.²

Marx Wartofsky offered another objection to a purely descriptive concept of disease. He argued that there are no fixed scientific concepts. Such concepts are conditioned by socio-historical factors. Therefore, what one person believes is a disease may not be recognized as such by another person at another time or in another culture. In response to this position, Patrick Heelan observes that “[b]y insisting that the notion of disease be defined [as a socio-historical entity], Wartofsky may have deprived us of the long term meaning of treating disease.”³ Twenty years later, George Khushf reinforced this point by observing that a libertarian account of medicine “runs contrary to many of the perceived demands within medicine, which range from licensure and the standardization needed for practice guidelines to the establishment of a basic health care package.”⁴

My own response to Wartofsky is that the concept of disease, as well as other medical concepts, is either linguistically intertranslatable or it is not. If the alien language containing these concepts is translatable into our language, then its conceptual scheme and causal explanations are not significantly different from our own. If it were, its concepts would be untranslatable. But if the alien language is, in fact, untranslatable, then we cannot automatically conclude that it expresses a different conceptual scheme from our own because it might, instead, be ex-

pressing facts or beliefs that are not identified by our language. Given non-translatability, we could never find out their meaning.⁵

I agree that there are no fixed scientific concepts, but not for the reasons offered by Wartofsky. As already indicated, concepts are theory dependent. The concepts that deserve our attention are those that acquire their meaning from true theories. But the truth status of a given theory is ultimately dependent not on historical or cultural factors but on its explanatory reach.

Let us assume that there is inter-translatability between Western medical language and the language of the Shaman. Wartofsky might have supposed that the Shaman, who understands me when I say that Western scientific medicine is most effective in applying medical treatment, might question my standards. Whose perceptions and judgments are correct? This question might make one feel like the person who sees the bucket descending in the well while being told by the flea on the bucket that the walls of the well are ascending. Can anyone be in a privileged position to answer such a question?

Fortunately, the issue of standards turns out not to be a problem for either me or the Shaman. His standard and mine turn out to be the same, so there is no need to choose between his viewpoint and mine. A person’s distress is what prompts the Shaman to attempt to heal an individual. That is also what the Western physician is prompted to do. The intentions and efforts, if not the techniques employed, are identical. Comparing the efforts of Western scientific medicine and those of the Shaman and other alternative practices indicates that the scientific approach is more effective in dealing with manifestations of disease than are the alternatives. This is not true because I say

it, but rather I say it because it is true. Anyone can check this conclusion including the Shaman.

The dominant aim of medicine is the elimination or prevention of illness. Terms such as "sickness," "injury," "affliction," "disorder," and "ailment" are sometimes used in place of the term "illness." Whether or not the term "etiology" is employed as it is in Western medicine, the discovery of the cause of an illness is a ubiquitous activity on the part of those, in any culture, who aim to eliminate or prevent disease.

The status of a given theory, whether scientific or not, is dependent on its explanatory power. Explanation serves as the basis on which an illness is eliminated or prevented. What is also needed is therapeutics or the ability to implement what has been explained. If we assume that the latter condition can be satisfied, then the theory that has the greatest explanatory power is *prima facie* true and retains its privileged position so long as no other competing theory can claim greater power. An indication of its truth, although not the only one, is its superior effectiveness, given adequate therapeutics, in eliminating or preventing illness. This sounds like Pragmatism: "Truth is defined by what works." But this is not necessarily so because it might very well be that what works is, in fact, true.

In most instances, illness, which manifests itself as discomfort or feeling distressed, indicates the presence of disease. Disease is also recognized in Western scientific medicine by the presence of specific physiological states independent of its expression as illness. This is exemplified by asymptomatic diseases such as hypertension and dermatomyositis. If untreated, these physiological states are likely to become symptomatic.

Distress or discomfort is usually undesirable, but not always. For instance,

flat feet may be desirable as a means of avoiding military duty. A more poignant example is found in a passage by St. Therese, who died of tuberculosis in 1892: "God has deigned to make me pass through many types of trials. I am truly happy to suffer."⁶ Furthermore, not all experiences of distress are evidence of disease. For example, a stomachache caused by overeating is not evidence of a disease. But a high fever is. We may feel ill when we have a stomachache. But if this ache persists, we may be inclined to refer to it as an illness.

In addition, not all experiences of discomfort need to be regarded as caused by disease. It is at least theoretically possible for a disease to be endemic in a community that is isolated from others so that the illness that is suffered is regarded by the community members as a normal part of the life process. But notice that the individuals of this hypothetical community do experience discomfort, and there is nothing conventional about that because this is what it is and not something else.

Let me then turn to the notion of an adequate explanation that is relevant to our discussion by way of the following examples. If one looks at a coin at a right angle to its surface, it will appear round. From other angles, it will appear oval or a narrow rectangle. Given these different appearances, why do we say that the coin is round? Because being round allows us to account for its appearances as oval or rectangular, whereas being rectangular does not allow us to explain its oval or round appearances and being oval does not allow us to explain its round or rectangular appearances.

Consider the following example. A stick that feels straight will look straight in air but will look bent when a portion of it is placed in water. If we depend on visual evidence alone, we

would say that the stick is, in fact, straight, but, in water, the stick is, in fact, bent. But this fails to take account of the fact that the stick feels straight both in air and water. The seeming incongruity between the visual and the tactile can be explained by the laws of refraction.

The examples of the coin and the stick provide support for the position that the explanation that is able to provide a coherent answer to all of the questions that are generated by a set of seemingly related phenomena is in the privileged position. It has the greatest explanatory reach. Someone might object by saying that the correct explanations for the coin and stick examples have to do with God. He sees to it that the coin is, in fact, rectangular, oval, and round, and that the stick is, in fact, both visually straight and bent when it feels straight. But if our visual and tactile experiences of the coin and stick remain the same under these circumstances, then God's control is irrelevant.

In the medical setting, being in a privileged position allows us to posit the existence of a disease even though it has not been expressed as distress or dysfunction. For instance, an individual may be suffering from coronary disease with no warning of a pending heart attack. If all that his or her physician depended on for evidence of such an attack was a felt response, then an understanding of the progressive nature of the disease and the possible prevention or delay of the attack would likely be precluded.

Does being in a privileged position also allow us to assert the existence of disease even though it is only expressed under specific conditions? Consider sickling or the development of sickle cells in Africa. An African who has the sickle cell trait as evidenced by an abnormal hemoglobin in the red blood cells has no symptoms of disease except

at high altitudes, where he or she can suffer a stroke. Is sickling a disease wherever abnormal hemoglobin is found or is it a disease only in those high altitude settings, where the trait can prove disabling or deadly? A person with an asymptomatic disease such as hypertension or coronary disease, if untreated, will likely suffer serious or fatal illness. This is not the case for those who have the sickle cell trait at low altitudes. Therefore, it is more appropriate to refer to sickling as a disease only in high-altitude conditions.

The fact that a disease may be asymptomatic or may manifest itself only under specific conditions indicates that disease may be studied without reference to suffering or disability, but only with reference to medical theory. I have already mentioned fluid mechanics, which evolved into aerodynamics, and the discovery of DNA, which led to genetic analysis. Obviously, our knowledge of disease is of such importance in dealing with illness that it is highly unlikely that its study would not be put to use as soon as possible. This may explain why the goals of clinical medicine are thought to merge with the goals of medical science, or, to put it differently, why there is a failure to distinguish between scientific explanation and its application.

As already noted, a theory is *prima facie* true if it has the greatest explanatory power among competing theories. As such, the favored theory is in a privileged position. History is replete with examples of purportedly true theories that have turned out to be false. A good example of a theory that turned out to be false concerns masturbation. "Masturbation in the 18th and 19th centuries was widely believed to produce a spectrum of serious signs and symptoms."⁷ These signs and symptoms, which included dyspepsia, constriction of the urethra, epilepsy,

blindness, hearing loss, rickets, and impotence, were ultimately shown to be attributable to other conditions and masturbation ceased being a disease.

Curiosity and the desire for effective control of nature to satisfy our purposes has driven humankind to seek explanations. Whether the relentless pursuit of knowledge puts us in touch with the phenomenal rather than the noumenal world is a metaphysical question that has no particular relevance in the realm of the mundane. In this world, we are satisfied with explanation that is coherent and efficacious. Let me illustrate this with a personal story. When she was 8 years old, my daughter, who was in her pajamas, posed the perfect Cartesian question: "Daddy, how do I know that I am not dreaming when I think that I am going to bed?" I replied, "Dream that you are going to sleep." After a moment's reflection, she decided that this made perfectly good sense and went off to bed. What made sense to her, and should to us, is that the ordinary assumptions and distinctions are preserved even if all of life is a dream.

The results of curiosity and our desire for effective control of nature are both involved in pursuit of the control or elimination of disease and illness. Thus, there is both a descriptive and an evaluative element in this enterprise. In general, whatever errors are made in falsely identifying a disease because of the influences of social values will, sooner or later, be rectified by the overriding need to eliminate distress or dysfunction.

The identification of something as a disease is not derived solely from medical science. This is clearly demonstrated in the following observations made by Scott DeVito. "The presence of *helicobacter pylori* (*h. pylori*) in one's gastro-intestinal tract can be cause for alarm because infection with *h. pylori* has been shown to cause gastric ulcers

in human beings. On the other hand, the presence of *Escherichia coli* (*e. coli*) in the intestinal tract is generally not taken to be a cause for alarm because its presence is (for the most part) benign. Gastric disease is rarely associated with the presence of *e. coli* and [it] would be, in general, wrong to speak of having an intestinal *e. coli* infection. In short the presence of *h. pylori* in one's gastro-intestinal system means one is diseased, while the presence of *e. coli* does not."⁸

The *Dorland* definition of disease, cited at the beginning of this article, refers to disease as a deviation from the normal functioning of the body as made manifest by a particular set of signs and symptoms. What should have been added is that a crucial sign, with the exception of asymptomatic diseases, is the presence of distress.

Proponents of Ethical Relativism have been sufficiently impressed with the diversity of practices and beliefs found in different cultures to declare that there is no objective basis for any moral judgments because all are relational in character. But this overlooks the fact that there is an objective basis in the context of medicine, which is that the subjective or evaluative reaction to illness is one of universal dislike and something to be eliminated. Moral judgments are indeed relational in character. But the central feature of this relation, with respect to medical judgments in all cultures and historical periods, is its connection with disease and illness-related distress and the effort to avoid or eliminate them. Given that Western scientific medicine has the greatest explanatory power among alternative theories, and therefore is the most effective in dealing with the sort of distress that is an expression of illness and disease, moral assessments of medical options are best discussed within its conceptual framework.⁹

Although the ubiquitous concepts of disease and illness provide directions in resolving many moral problems in medicine, they do not do so in all cases. For instance, they fail to resolve the issue of physician-assisted suicide to everyone's satisfaction because there is so much controversy about what counts as a benefit in the relevant circumstances. In a similar vein, we find that the concept of personhood and the scope of who or what counts as a person is inherently vague. As Tom Beauchamp has observed, "It is simply not orderly, precise or systematic in a way that supports one general philosophical theory to the exclusion of another."¹⁰ This has led to our inability to determine medical appropriateness of stem cell research or abortion. Other issues such as self-governance, family decisionmaking, truth telling at the end of life, and confidentiality, although clearly matters of medical concern, also remain controversial. Perhaps they should be left to ethics. For such issues, cultural diversity and ethical relativity may be relevant. But then it should be noticed that relativistic thinking is only a small part of the larger medical landscape.

Notes

1. Sutton OG. *The Science of Flight*. Middlesex, UK: Penguin Books, 1949:Ch. 1.
2. Porter R. *The Greatest Benefit to Mankind: A Medical History of Humanity*. New York: W.W. Norton & Co., 1997:558.
3. Heelan PA. Comment on Toulmin and Wartofsky. In: Engelhardt HT Jr, Spicker SF. *Evaluation and Explanation in the Biomedical Sciences*. Boston: D. Reidel Publishing Co., 1975:92.
4. Khushf G. Reflections on health and disease. *Journal of Medicine and Philosophy* 1995;20:404.
5. Cf. Davidson D. On the very idea of a conceptual scheme. *Proceeding of the APA* 1973-74. 47:5-20.
6. See note 2, Porter 1997:86.
7. Engelhardt HT Jr. The disease of masturbation: Values and the concept of disease. *Bulletin of the History of Medicine* 1974;48:234.
8. DeVito S. On the value neutrality of the concepts of health and disease: Into the breach again. *Journal of Medicine and Philosophy* 2000;25(5):539-40.
9. Those who doubt whether physiologically based explanations can provide adequate accounts and effective treatments of psychological disorders need to be reminded of the effective employment of psychotropic drugs and of our ability to generate and extinguish moods by electrical charges into specific areas of the brain. See Damasio A. *Looking for Spinoza; Joy, Sorrow and the Feeling Brain*. New York: Harcourt, Inc., 2003.
10. Beauchamp T. The failure of theories of personhood. *Kennedy Institute of Ethics Journal* 1999;9(4):319.