A Closer Look at Health and Disease as Prerequisites for Diagnosis and Prognosis

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Abstract Health and illness are key concepts of medicine but they also have essential significance for each and every one of our lives. For this reason, social value systems are inevitably integrated into medicine through the concept of health and illness. In turn, medical knowledge and medico-scientific notions are perpetually incorporated into societal perceptions of health and illness. Generally, such integration usually occurs via an extended concept of health and illness, which is to be discussed in the following. To a certain extent, medical and societal notions of health are mutually co-determined. The underlying dynamics deserve a closer look because if health and illness are societal and medical concepts alike this fundamentally impacts on the epistemological and the practical dimension of diagnosis and prognosis as discussed in this volume of *Medicine Studies*.

Keywords Health · Concepts of disease · Diagnosis · Prognosis · Medical epistemology · Philosophy of medicine

Health and Illness

With this issue of *MEDICINE STUDIES*, we want to stimulate a debate on the shifting key concepts of medicine, health and disease. We observe how disease becomes a more and more future-oriented concept leading to a situation in which medical interventions are often addressing deviations in the (biological) behavior of the human organism, which have no disease value in their own right but may be indicative for the future onset of disease (such as high serum cholesterol levels, high blood pressure, overweight, low estrogen levels). Due to this shift, diagnostic knowledge turns more and more into prognostic knowledge. What are the underlying theoretical and practical implications of this shift? Which are the driving forces behind the incessant metamorphosis of health and disease? We would like to invite scholars from the broad field covered by *MEDICINE STUDIES* to join us in this debate in which this issue may only be a first step to feel our way into a fresh discourse on health, disease, humans and the ways in which diagnosis and prognosis may—or may not—work. Our starting point is, as already pointed out, an evolutionary epistemological exploration of health and disease:

Health and illness are key concepts of medicine but they also have essential significance for each and every one of our lives. For this reason, social value systems are inevitably integrated into medicine through the concept of health and illness. In turn,

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medical knowledge and medico-scientific notions are perpetually incorporated into societal perceptions of health and illness.¹ The changes that have been applied to medical care for terminally ill persons issuing from new approaches in palliative medicine are one recent example of how social value systems are integrated into medicine.² Generally, such integration usually occurs via an extended concept of health and illness, which is to be discussed in the following. The fact that it has become uncustomary to spit in hallways and on streets results from an integration of medical notions into daily life—here specifically notions of bacteriology, or rather tuberculosis research. The same goes for changes in sexuality through HIV/AIDS and patients' concern about their cholesterol levels. Thus, to a certain extent, medical and societal notions of health are mutually co-determined. This dynamic deserves a closer look.

Health and illness are thus societal and medical concepts alike; in our scientifico-technologically determined cultures, to be sure, the role which medicine plays in defining and elucidating these concepts increases constantly. Through a culturally and historically variable understanding of health and illness, not only certain value systems are integrated into medicine; the realm of medical competence and action is staked out by them as well.³

For medicine, the concept of health as it emerges in this dynamic relationship forms the target-aimed, *teleological category* which all action is related to. In contrast, the concept of illness constitutes the *legitimational category* which the necessity, permissibility and interventive penetration of medical action are derived from.⁴ In this way, concepts of health and illness are both invested with a *normative function*. This presupposes a certain way of dealing with health and illness. Historically, the way in which modern medicine has completed the transition from *preanalytic*

(ontological) to *analytic* concepts of illness and what consequences this has had for the concept of health provides us with interesting insights regarding the cultural and medical co-constructedness of health and disease. For the matter of this editorial note, we need to focus on conceptual aspects of health and illness on one hand and on the function fulfilled by concepts of health and illness within the framework of medical problem-solving processes on the other. It is the significance of concepts of health and illness being thematized on the level of day-to-day medical practice, which makes the practical relevance of those rather conceptual and theoretical observations highly visible.

It should be pointed out early on that concepts of *health* and *illness* do not merely have general significance for medicine. In fact, they have direct impact on the definition of illness entities and thus on medical thought, decision-making processes and actions. For this reason, reflections on *diagnosis* and *prognosis* carried out in this volume of Medicine Studies are brought into close thematic connection with elucidations on health and illness.

Health and Illness in Modern Medicine

Regarding the Origin of Scientifico-Analytic Concepts of Illness

As late as the mid-nineteenth century, medicine generally viewed illnesses as objects of nature or independent *natural beings*. This is referred to as an *ontological concept of illness*. It was rooted in a *metaphysical view of nature* whose precondition was a firmly established notion of regularity investing organic existence with meaning.⁵ Since illnesses were considered to be forms of existence in nature in their own right, their relationship to the human organism was viewed as quasi that of *parasites* which destroyed the host organism's natural way of life. Thus, in his 1842 treatise entitled "*Die abnormen Zustände des menschlichen Lebens als Nachbildung und Wiederholung normaler Zustände des Tierlebens*" ("*The abnormal conditions of human life as a replica*

¹ Cf. in particular Canguilhem (1974).

² Unfortunately, it is not possible to explore more deeply the fruitful discussion concerning the social construction of illness in this sphere. Lachmund and Stollberg (1992) provide an introduction to this topic.

³ These questions have also been the subject of a fruitful and extensive discussion. For an introduction cf. Jordanova 1995. Concerning a discussion in connection with issues of modern biomedicine cf. Paul (2002).

⁴ Cf. Labisch and Paul (1998).

⁵ Cf. Virchow (1930), p. 12ff.

and repetition of normal conditions in animal life”)⁶ Ferdinand Jahn (1804–1859) viewed illnesses as “independent, lower forms of life.”⁷ The crucial point is that ontological concepts of illness make *no* distinction between the description and the evaluation of illness.⁸

As scientific concepts became integrated into medicine, ontological concepts of illness were replaced by *analytic ones*, and the concept of nature slowly but surely lost its metaphysical dimension through the analytic approach taken by the experimental sciences. Illnesses came to be described increasingly as natural processes in the human organism. This had far-reaching consequences for medical thought. In the new view, advocated programmatically by Rudolf Virchow⁹ for one, the processes occurring in the organism had to be evaluated separately in terms of whether they were “normal” or “pathological” in order to make a distinction between health and illness possible in the first place. Both were ultimately viewed as *part of the natural order*.¹⁰ When was an organic process actually pathological; when was it merely a physical variant, i.e., in a genuine sense “healthy?” During the transition toward scientific medicine, the investigation into changes in tissue and cells was to supply the criterion for health and illness. In this way, illness was essentially bound to a substrate. The works of Rudolf Virchow were considered as essential contributions to this new concept of medicine, particularly his studies entitled *Cellular Pathology*.¹¹ How can the distinction which is made between description and clinical significance of illness in twentieth- and twenty-first-century medicine be explained in light of this, however?

Demarcation of Health and Illness Through the Distinction Made Between Description of Illness and its Clinical Significance

Illness-related medical knowledge is to be found at two levels: for one we find explanations of the

“morphological and functional-causative connections in the organism as a whole. [...] The organism is described in terms of ‘healthy’, ‘normal’ and ‘pathological’ phenomena.”¹² These are derived from empirical results which, in the age of biomedicine, are ascertained with the help of *experimental systems*.¹³ On the other hand, “knowledge on the medical *relevance* and *assessment* of these connections, in particular concerning the clinical significance of illness,”¹⁴ also exists.

Description and clinical significance of illness differ primarily as regards methods of verifiability. Descriptions of illness can be verified empirically or experimentally. Assessing the clinical significance of illness requires recourse to value systems, however, which are to be brought into relation to the complaints and ailments of the patient. Whereas the ontological concept of illness unites both aspects, the use of an analytic concept of illness in medicine calls for twofold justification: only the medical distinction between physiological (healthy) processes and pathological (morbid) ones makes *diagnosis* as discussed in this volume possible; only the recognition that an illness has clinical significance legitimizes the helping or healing intervention of medicine. The necessary justifications create problems at several levels.

From a systematic as well as a clinico-pragmatic perspective, the differentiation between description and clinical significance of illness initially appears not to be very helpful. As was previously mentioned, even (seemingly) analytic concepts of illness always convey a basic understanding of an organism’s “normal,” “natural,” i.e. physiological organization and functioning, thus comprehending from the start a judgment on health and illness colored by social values. Moreover, the demarcation between description and clinical significance of illness generates a problem when it comes to mediating between the perception of illness on the part of the afflicted person and the medical concept of health and illness. Given the distinction between an analytic description of disease in terms of clearly defined *nosological entities* and the clinical significance of illness is there truth to the cynical ascertainment that patients

⁶ Cf. Jahn (1842).

⁷ Roths Schuh (1975), p. 403.

⁸ Cf. Paul (2003).

⁹ Virchow (1869), pp. 185–195.

¹⁰ Cf. in particular Roser and Wunderlich (1842).

¹¹ Cf. among others Virchow (1858).

¹² Cf. Hucklenbroich 1989, p. 144.

¹³ Regarding this issue cf. elucidations on scientifico-theoretical aspects of medical research in the volume at hand as well.

¹⁴ Hucklenbroich 1989, p. 144.

without pathological findings are actually healthy, whereas purportedly healthy individuals have merely not yet been sufficiently diagnosed?

Concepts of Health and Illness in Modern Medicine

The Ill Individual, the Physician and the Disease

The indispensable function and necessity of an analytic concept of disease in modern medicine consists in enabling one to formulate theoretically grounded assumptions on the organism's regular ways of functioning and possible deviations in the first place. In modern medicine, biomedical knowledge and the patterns of explanation derived from them have become the preferred means of making clinical praxis verifiable, controllable and thus also safer. Thus, the *normative function* of analytic concepts of disease which demarcate the description and clinical significance of illness should not be underestimated. Biomedical knowledge generated using the methods of the modern sciences does not only serve to ensure controllability and quality assurance in practice after the fact, i.e. *ex post*. It also supplies fundamental criteria for assessing medico-practical problems. Thus, it has a determining effect insofar as it *predetermines*, to a certain extent a priori, the perspective which a clinician can adopt in regard to a practical problem.

The *plausibility* of medical decision-making is dependent to a considerable degree on this circumstance—for example within the framework of *making diagnoses* as discussed later in this issue of Medicine Studies. Mapping the complaints of the individual patient as precisely as possible onto the analytic clinical picture anchored in the medical body of knowledge and represented in the form of general propositions is an imperative precondition for achieving such plausibility. The aforementioned problem of mediating between the patient's perspective and the medical perspective on illness is to be illustrated using an example.

The patient who visits the scientifically trained physician will depict his complaints as exclusively subjective perceptions in what is of course an unscientific manner—insofar as he is not

medically trained himself—which he evaluates in keeping with his individual horizon of experience. Ms. K., a 27-year-old woman, has just moved. She consults a gynecologist whom she has not met before because of pain she experiences during and after sexual intercourse. Since the patient worries considerably about her complaints, her depiction focuses primarily on problems dealing with intercourse. The physician makes efforts, however, to objectify the results on the basis of interviews with the patient and clinical investigations so as to be able to turn an individual experience with illness into a case of disease. This case is represented in a specific, analytic clinical picture. As it turns out, the woman is suffering from an inflammation of the fallopian tubes with impact on the ovaries, which can be treated with antibiotics. The discomfort during intercourse, which formed the focus of the patient's concern, merely constitutes a concomitant symptom in the biomedical realm.

Within the framework of diagnostic problem solving the attempt is made to pool all available information on the patient in such a way as to enable the physician to map it onto medical disease patterns represented by general propositions. How to decide *which* knowledge about the individual case is in fact relevant for medical representation can be decided neither on the basis of the information supplied by the patient herself nor on the basis of the medical knowledge, however.¹⁵ Instead, what is involved in the sense of a skill is *pragmatic knowledge* on how making decisions and acting in individual cases can be justified.¹⁶ The emphasis on acute complaints—here in connection with sexual activity—corresponds to the patient's concerns. The search for biological causes of the complaints corresponds to the *necessitation to make a diagnosis*. The relevance of individual pieces of information and results is *situative*, however, i.e. ascertained in accordance with pragmatic aspects of a given situation and not in accordance with rigorous scientific explanatory schemata. To be sure, analytic concepts of disease form the basis for well-founded clinical praxis, but they can only prove efficacious with certain limitations. This is

¹⁵ Concerning this range of problems cf. Paul (1996).

¹⁶ Cf. Wieland (1983) and Wiesing (1993) as well.

primarily because when it comes to situative problem solving, knowledge about a patient is always incomplete and often vague. Thus, only in the most favorable, rarest cases can *causal conclusions* be drawn from an occurrence of illness and symptoms be mapped onto analytic concepts of illness unequivocally.

Health and Illness as Normative Medical Concepts

In the case of Ms. K., it turns out that after years of entertaining a stable relationship her wish for a child remains unfulfilled. Her family physician, who has just set up a practice in the area, recognizes the psychological strain which remaining childless puts on his patient, now 38 years old. He recommends a referral to a colleague in a fertility center in a clinic nearby. Here, the question should be clarified as to whether artificial insemination is an option for the couple and in particular whether Ms. K.'s partner suffers from the limitation on reproductiveness. When the patient is about to leave, the family physician asks the patient to inform her gynecologist of the step which is to be taken. Thanks to the gynecologist's powers of recall, she remembers the episode with the inflammation which had occurred 11 years previously and suspects that the fallopian tubes have been impaired by the incident which occurred at that time. Indeed further examinations show that the fallopian tubes are apparently occluded as a result of inflammation. Now the focus is placed on microsurgical treatment of the fallopian tubes, and the appointment for consultation at the fertility center is cancelled for the time being.

Apparently, the decision as to whether a patient is diseased or not and the degree to which a need for clarification and treatment is given cannot be determined unequivocally. The clinical significance of childlessness is felt to be so large by the physician and the patient alike that the direct course of action for remedying the situation, i.e. artificial insemination, is taken into consideration as the first option. Frequently gaining information from a series of diagnostic procedures or from the effects of an already initiated therapy is needed before a medico-scientific conclusion can be drawn which identifies the health problem of the patient in the sense of the first cause (*etiology*) of a disease. In this process of *differential diagnosis*, i.e. the exclusion of several possible disease patterns,

it is necessary to mediate between the various notions of illness and health entertained by the physician and the patient. They often have differing descriptions of illness at their disposal as well as differing notions about their clinical significance. The need to make a diagnosis on the one hand and to promote communication between the physician and the patient on the other is what lead to a constant interchange between medical and societal notions of health and illness on the level of daily medical practice. In this way, health and disease become effective as key concepts in the relationship between the physician and the patient.¹⁷

Thus, the implications are described which result from the fact that social value systems and legitimizations enter into concepts of health and illness at the interface of medicine and society. In addition, insights into other sciences are integrated into concepts of health and illness. Thus, an elusive interchange between societal and cultural notions of illness on the one hand and scientific notions of disease on the other occurs. This holds for the level at which individual illnesses of individual patients is perceived as well as for the categorical level at which one decides when an organism, which is to say, a human being, can be called healthy or diseased in the first place. Whether and under what circumstances childlessness is a disease depends on social value systems and the level of suffering experienced by the woman or the couple and on biological–medical criteria—such as the woman's age—to the very same degree.

Conclusion

Even in our age of value-pluralistic societies and scientifico-technological medicine, one can say that no medical definition of illness—as “correct” as it might be—is usually accepted “if it does not harmonize with the notions of illness entertained by the age.”¹⁸ From an historical perspective, interpretations of illness occur in a perpetual, repetitive process: viewed over long periods of time the effort is made time and again to answer the question “What is illness?” anew at various intertwined levels of interpretation in the

¹⁷ Cf. fundamentally Wieland (1986).

¹⁸ Rothschild (1975), p. 2.

realms of medicine, culture and society.¹⁹ In this field, modern medicine, as a science and a practice, plays an increasingly important role.

In light of such considerations, one can ascertain that in departing from an ontological understanding of illness and embracing an analytic notion of health and illness in twentieth- and twenty-first-century medicine, the description and clinical significance of illness have become demarcated. This has created the essential prerequisite for the formulation of theoretically grounded assumptions on the organism's regular (healthy) modes of functioning and possible (pathological) deviations. Within this framework, biomedical knowledge and patterns of explanation derived from it have become preferred means of making clinical practice more verifiable, controllable and thus safer. In the process, seemingly analytic concepts of disease have taken on a normative function. Furthermore, one must ascertain that medico-scientific notions of health and disease depend to a high degree on societal notions and value systems. Thus, mediation between medical and societal notions of health and illness at the conceptual level as well as in the everyday realm constitute an imperative prerequisite for the implementation of a medically purposeful, socially acceptable and normatively justifiable medical diagnosis and practice.

Against this background, the editors of MEDICINE STUDIES would highly welcome contributions dealing with the pressing questions sketched above.

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¹⁹ Cf. Canguilhem (1974).