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Christopher Boorse and the Philosophy of Medicine

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I. INTRODUCTION

In 2012, the symposium "Christopher Boorse and the Philosophy of Medicine" was held at the University of Hamburg. The initial ideas presented at this event, which celebrated Chris's contribution to the development of what is now a vibrant area of research, especially to the theory of disease, form the core of the papers published in this issue.

Similarly to what Robert Nozick once said about John Rawls's work, it can be demanded that philosophers of medicine must now either work within Boorse's theory or explain why not. It is simply the main contender in the so-called naturalist camp of contributions to the theory of disease. All of the papers in this issue address his approach in some respect, and all of them are friendly toward his theory up to a point. In this brief introduction, I try to extract common threads. In doing so, I focus on three issues that have the capacity to determine future debates. The first is the methodology of developing a theory of disease, especially what conceptual analysis amounts to and what it may achieve. The second is the issue of value-ladenness of the concepts of health and disease, a topic that has been at the forefront of the philosophical debate, but which—to my mind—has often been misunderstood. The third issue is the problem of the unity of medical terminology. We can ask whether there is only one core medical concept, be it "disease," "pathology," "disorder," "malady," or something else. Alternatively, we might propose different concepts for different purposes.

II. THE METHODOLOGY OF THE THEORY OF DISEASE

"Disease" is arguably not a natural kind term. We cannot simply read off from nature which conditions of human beings or other organisms are

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pathological. Yet it is also implausible to claim, in a radical social constructivist perspective, that we can more or less arbitrarily decide what we see as disease. Surely, there is no logical mistake in calling all kinds of conditions we do not like or want to be treated by medical means "pathological." Yet it would not be sensible, because it would undermine at least one important purpose of having a concept such as disease at all, namely, to delineate a realm of medical conditions from other conditions that are healthy, even though they may be disliked. So the main obligation of any theory of disease is to deliver reasons as to why the relevant concepts are defined in the way proposed. There is not *the* concept of disease, but several theories that propose definitions. We check these theories' plausibility by testing them against features of the world, including linguistic intuitions, and against our practical purposes. This obviously has repercussions on the methodology of developing a theory of health and disease.

Boorse has often claimed that his own theory is in line with the usage of the concept of disease within medicine, or more specifically, medical theory. In fact, he sees actual usage in medicine as a possible test for his account. This means that ideally the extension of the concept, or the elements within the class of diseases, should be the same in both Boorse's theory as well as in medicine; that's because the concept or intension, which is usually laid in the form of a definition, determines the extension. So if there were examples of clear-cut diseases within medicine that do not fall under the concept of the pathological (or disease in a broad sense), as defined in Boorse's theory, then his definition would either have to be amended, or medical usage would have to be reformed.

Jerry Wakefield (2014), in his paper, challenges Boorse in this respect, and presents several examples of incongruencies between medical usage and his theory—for instance, regarding human immunodeficiency virus-positive status and situs inversus totalis. Peter Schwartz (2014) and Peter Hucklenbroich (2014) also deal with this problem—they mention rare abnormalities and the unsystematic conceptualization of "function" in medical theory. Boorse (2014) himself also discusses the final "court of appeal" regarding the extension of the concept. Boorse's way of presenting his intention in this respect sounds as if he is aiming at something in the tradition of ordinary language philosophy, though the actual medical language is not exactly ordinary, but based on expert knowledge. To be sure, the actual wording of definitions of "disease" in medical textbooks does not need to be the same as Boorse's. After all, his theory is supposed to make explicit and put into a coherent definition, the understanding of medicine. Even experts in a particular area may not be able to formulate a definition of core concepts of their profession; that is a task that philosophers like to fulfill and which might be seen as their proper service to other professions, such as medicine.

Yet there is also a sense in which making explicit a concept that is in use within a pluralistic discipline—pinning it down, so to speak—necessarily

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leads to the need for revisions in putative cases. If certain conditions are not covered by the best coherent account of the actual medical usage, then these conditions ought not to be seen as diseases. This is the revisionary consequence when aiming at a theory of disease that is coherent and in (best possible) congruence with the considered usage of the profession. If actual usage is pluralistic and if we attempt to sort out medical terminology by developing a coherent concept of disease, then some of the putative cases of disease will have to be seen in a different light. I believe that Boorse does not acknowledge this revisionary aspect explicitly enough, though he hints at it.

There should be a more concerted future debate within philosophy of medicine regarding its methodology, especially the purposes of developing a theory of disease (cf., Forstrom, 1977; Hunter, 1989; Lolas, 1996). From the contributions to this special issue, I take it to be an important task of such a theory to deliver an explication, that is, an attempt to make more exact and clear a particular concept. This task is explicitly discussed in Schwartz's paper and hinted at in many of the others. Boorse's theory might still be the best explication of the theoretical concept of disease and could help us to sort out the often incoherent use of language within medicine. Even if there might not be *the* right conceptualization, there are nevertheless ways to argue for a preference of one definition over another.

III. VALUE-LADENNESS AND NATURALIST THEORIES OF DISEASE

Theories can be value-laden in several respects. For instance, they can rely on certain purposes, such as containing the proliferation of putative diseases. In this respect theories can be externally value-laden, since purposes that are themselves external to a theory would determine the way of its advance. Theories could also make use of theoretical elements that require human evaluations (as opposed to factual statements), for instance, when referring to elements of well-being within a definition of disease. This would make a theory internally value-laden.

Elselijn Kingma's (2014) contribution in this issue makes considerable progress in sorting out different kinds of value-ladenness. It seems obvious—especially when accepting that there is no right way of defining disease that can be checked against empirical facts alone, but only a best explanation of disease as considered within medicine—that value-judgments will creep into any theory of disease at some point. So in one sense the whole debate on value-ladenness within philosophy of medicine (see e.g., Margolis, 1976; Brown, 1985)—whether defining the concept of disease requires reference to values or value-terms—has been on the wrong track because it was not quite clear in what sense a theory, such as Boorse's, was supposed to be value-laden (cf., Lennox, 1995; Sade, 1995; Fedoryka, 1997; DeVito, 2000).

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The main issue is in what sense a theory refers to values or requires value-judgments. According to Boorse, his theory is not value-laden in the sense that a theory of disease needs to be value-laden in the eyes of most normativists, namely, by reference to aspects of the good for human beings. What disease is can be stated without saying what it means for people or how it is (or is not) affecting them. To show that Boorse's theory relies, for instance, on evaluations concerning cut-off points of effective functioning does not make him a normativist in this sense, of course. This can be seen when reading Dan Hausman's (2014) contribution to the present volume, who points out that functional efficiency needs to be understood relative to specified system goals.

There is a sense in which the labels "naturalism" and "normativism" were ill-conceived right from the start. Boorse himself has taken over the label "bio-statistical theory," or BST for short, that Lennart Nordenfelt coined a while ago (Nordenfelt, 1987). Although that term has its own problems—because it implies that statistical elements are on the same level of importance as biological ones, which is misleading at best (see Hausman's essay)—the label has the advantage of making explicit that Boorse's account is a theory. Theories can be assessed against other theories, and it does not matter much to which camp of theories they belong, because by refuting a particular theory we cannot refute a camp of theories. In one word, even if Boorse's theory would fail in certain respects, that would not make naturalism about health and disease fail. Again, this is a consequence that can be seen in all of the essays for this special issue, because in a certain sense of the word, all of the authors are naturalists; they all see core elements of the concept of disease to be factual.

IV. THE UNITY OF MEDICAL TERMINOLOGY

The concept of disease can be used in different contexts and from different points of view. Boorse has always been explicit that he intends to discuss the concept as it is used in medical theory. But what exactly is medical theory? He also says that he wants to analyze the concept of disease as it is used in pathology. Yet many real pathologists do not make any statements about disease at all, but leave this to doctors. They examine tissue, laboratory results, etc. of putative patients and describe the status of these samples. Diagnosis goes over and above this, because it is a matter that requires some clinical expertise beyond mere findings. So arguably the status of something being a disease is not simply a matter of pathology. But this is just one possible perspective on disease: the clinician's. Yet Boorse apparently does not mean pathology in the sense of a clinical subdiscipline, but as a theoretical approach to the study of disease. We can find this approach in medical research, for instance, when certain mechanisms are being studied and an

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attempt is being made to determine thresholds of pathology. This is in line with Boorse's suggestion that we need to determine the level of effective function, because it is here where we should draw the line between medical normality and pathological conditions. In a certain sense this line is indeed theoretical, because we are not—in that specific context—interested in a particular case, but in the regularities of many (potentially all) cases. We aim to establish general, ideally law-like, rules about when to call a certain condition pathological, and also what particular kind of pathology it is. The latter aspect, developing a nosological system, is seen by Hucklenbroich, in his article, as the main element of a theory of disease, when he describes disease entity as the core concept of medicine. Whether this is convincing or not, it should be clear that the scientific task of determining which phenomena we encounter in the real world fall under the concept of disease, and also how we can classify the different types of disease entities in the best possible way, is a theoretical task, as opposed to determining whether a particular person falls under any of the specific disease terms we find in our classificatory system, such as the ICD. The latter task is diagnosis and it is a feature of medical practice.

Obviously, this way of splitting medical theory and practice is itself an idealization. After all, medicine's diagnostic systems do serve practical purposes; they are not just there to sort out the "garden of diseases" in a style reminiscent of Linné's biological taxonomy. Medicine is both an art and a science, and the science part of it is, in reality, impregnated by its art part. This does not undermine Boorse's purpose of setting up a theory that applies to theoretical aspects of medicine. But it is another way of showing why it might be too tall a task to try to be in line with the actual medical usage of the relevant terms, a point that is made by several authors in this volume.

There have been attempts to sort out the difference between more theoretical and more practical perspectives on ill-health by using different notions to describe them. Most notably, many philosophers, including Boorse, have suggested that the distinction between "disease" and "illness" might do the trick (cf., Hofmann, 2002). But that seems a bit optimistic, as there is no restriction in actual language use that would require speakers to take a particular perspective when using a particular word. Boorse himself has changed his mind about his original account of illness (Boorse, 1987), but be that as it may, it nevertheless seems to be helpful to distinguish the different contexts and purposes in which we can use medical terminology, even if the words we currently use do not map easily to distinctive contexts. Jerry Wakefield, in contrast, seems to suggest using only the word "disorder" and combining theoretical and practical purposes in one definition. Do we need several concepts of ill-health or can we save the unity of medical terminology?

With this question being asked, there can be at least two discussions lying ahead. One concerns the actual possibility of a thoroughly theoretical notion

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of disease; the other is a debate about what we would gain by a purely theoretical account of the pathological. Wouldn't this merely be a philosophical abstraction, in the bad sense of the phrase?

Regarding the first point, it is arguably a plain fact that medical researchers really do study diseases from a theoretical point of view. They may even come up with diseases that are theoretical in the sense that no single person has ever had them. After all, there might be biological dysfunctions we can learn about by studying the human organism in its complex biological structure and organization. This is, incidentally, another reason for not seeing much significance in statistical evidence about the distribution of levels of functioning in real people, a point stressed by Hausman. The more we learn about the organism, the more we also learn about its potential dysfunctions. We can understand, for instance, why a certain function cannot be fulfilled in an organism when a particular lower mechanism does not work efficiently anymore. What is more, up to a certain point scientists can find out about functions and dysfunctions of organisms by studying just one specimen. We know parallel cases from industrial espionage and more generally from so-called reverse engineering. All of this is meant to belabor the simple point that we can see disease from a theoretical perspective, without mainly studying patients. I believe this is the perspective that Boorse takes.

But isn't this perspective futile, as it does not seem to help us in solving any practical concern of medicine? This is not merely meant as referring to the obvious ethical issues that cannot be settled by a theory of disease, such as whom to treat by medical means and who might have an entitlement to publicly funded treatment. It is a more basic complaint regarding the practical purpose of determining who is to be regarded as a patient, that is, as having a disease in the practical sense. If there can be levels of pathology that are totally insignificant from a personal point of view, a point clearly worked out in Wakefield's "one dead cell argument," then one might wonder what we have gained by such a perspective. In opposition to such a complaint, it seems obvious to me that the theoretical perspective does help us in giving us an instrument to quarrel in a scientific, well-reasoned way about putative diseases. There might be many reasons for not listing insignificant pathologies in classificatory systems, such as the ICD or DSM, because these classifications serve practical purposes. But what ought we to refer to if there is a debate as to whether a certain condition is a disease at all? We then need a theoretical perspective.

Again, there is a potential objection that such a theoretical perspective does not suffice to justify the usage of medical terminology, but warrants "merely" the usage of the notion of biological dysfunction. This objection is raised, in a slightly different way, in Wakefield's paper; Hausman makes a similar point about the notion of dysfunction being the more important one in Boorse's theory than "pathology." Yet, whatever we eventually think about the unity or plurality of medical terminology, all authors in this issue seem to agree that we need a theoretical perspective on the phenomena.

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I would like to add that to my mind Boorse's theory is still the best available theory for that particular purpose and that therefore we should indeed work within his theory, even though we might not accept every element of it.

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