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Defining disease beyond conceptual analysis: An analysis of conceptual analysis in philosophy of medicine.

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ABSTRACT

Conceptual analysis of health and disease is portrayed as consisting in the confrontation of a set of criteria—a “definition”—with a set of cases, called instances of either “health” or “disease.” Apart from logical counter-arguments, there is no other way to refute an opponent’s definition than by providing counter-cases. As resorting to intensional stipulation (stipulation of meaning) is not forbidden, several contenders can therefore be deemed to have succeeded. This implies that conceptual analysis alone is not likely to decide between naturalism and normativism. An alternative to this approach would be to examine whether the concept of disease can be naturalized.

KEYWORDS.

Disease. Definition. Conceptual analysis. Naturalism. Normativism. Naturalization.

INTRODUCTION

Defining ‘health’ and ‘disease’ is often held to be central to philosophy of medicine, yet it still constitutes an unresolved question. The contest among different approaches is traditionally presented as opposing normativists and naturalists. However, most contenders share the belief that *conceptual analysis* is the right procedure for resolving the matter. At

least this is the case for three of the major candidates. Christopher Boorse [1, p. 20], Lennart Nordenfelt [2, p. 6], and Jerome Wakefield [3, p. 349] have explicitly shaped the debate on these terms and have thereby forced others to contribute according to the same procedure. This seems to be a rather trivial demand. But what exactly are the rules and the potential achievements of conceptual analysis?

The present article first describes the task of conceptually analyzing concepts of health and disease. It offers a short exposition of the rules and an illustration of their application in Boorse's, Nordenfelt's, and Wakefield's works, with emphasis on the difficult cases they deal with. The core idea is that conceptual analysis consists of an attempt to test a set of definitional criteria and exceptions against a set of given cases, while drawing up counter-cases against an opponent's definitions. Second, different proposals of this kind are examined here with the aim of considering whether conceptual analysis can decide between naturalism and normativism. For this, a basic distinction between intensional and extensional stipulation is introduced. The main objection to conceptual analysis is that it cannot rule out intensional stipulation, i.e., stipulation of the sense of a term, as clearly as extensional stipulation, i.e., stipulation that a definition should include or exclude a given case. Therefore, conceptual analysis is not an appropriate tool for choosing between *naturalism* and *normativism*.

DEFINING HEALTH AND DISEASE BY CONCEPTUAL ANALYSIS

“Conceptual analysis” is the search for an exact, that is, descriptive, definition of a term. In this section, I propose a straightforward formulation of the rules of conceptual analysis. Then I will illustrate how this captures the modus operandi of the discussion among actual conceptual analysts of health and disease. Finally, I will examine how some controversial cases are dealt with.

A short formulation of the rules of conceptual analysis

The purpose of conceptual analysis is to define a term. For my purposes, the term is ‘health’ or ‘disease’ or both. In the last case, one either defines one word in terms of the other or assumes that both terms are to be defined together, so that the analysis will also have to determine the logical relation between the terms ‘health’ and ‘disease.’

A conceptual analysis of either health or disease or both starts with selecting cases from a set of uncontroversial cases of health or disease or both. This set is referred to as the *extension* of either the term ‘health’ or ‘disease’ or both terms. A definition is then set up in the form of a set of criteria. These must be expressible under the form of necessary and sufficient conditions, on the one hand, and exceptions to these conditions, on the other. Using these criteria, one should be able to correctly place each case inside or outside of the extension of the set (or sets).

An opponent of this proposed definition must either propose a different definition or attack the previous one or both. There are three kinds of attacks. They consist in presenting (1) cases falling within the commonly accepted extension of the term but which do not satisfy the opponent’s definition, (2) cases that do satisfy the opponent’s definition but which fall outside the commonly accepted extension, and (3) cases that fall clearly inside or outside the extension but which the opponent’s definition fails to classify at all.

In order to win such a debate, a contender must propose the only remaining definition of the term, which would involve eliminating the other contenders’ definitions and not having one’s definition eliminated. Boorse has nicely summed up the process by comparing it to a game: “to call pregnancy *per se* unhealthy would strike at the very heart of medical thought; it is the analytic equivalent of the ‘Game Over’ sign in a video game” [4, p. 44].

Are contenders actually following those rules?

In this section, I put the proposed account of conceptual analysis to the test. First, I argue that most of those who contribute to defining the concepts of health and disease follow the above rules of conceptual analysis. Then, I assess the descriptions of the task that the main contenders (Boorse, Nordenfelt, and Wakefield) themselves provide, and determine whether they correspond to my formulation.

It would be tedious to list all those who have contributed to the conceptual analysis of ‘health’ and ‘disease,’ but the most famous and successful contributors are probably Boorse, Nordenfelt, and Wakefield [2, 4, 5].¹ Most relevant to my current concerns is that they all (1) propose a definition of health, disease, or both, (2) give examples of actual diseases, (3) examine apparent counter-examples, and (4) offer counter-examples to the contending proposals for definitions. Although there is much more to their contributions than following these rules, these rules clearly represent important aspects of their approaches. Thus, these authors can be understood as employing conceptual analysis, even if not apparently, exclusively, or predominantly (other goals might include solving the ontological problem of disease, addressing issues in classification or causality, speculating about the relation between living, dying, and disease, and so on).

I now consider how Boorse, Nordenfelt, and Wakefield can be examined according to the rules of conceptual analysis stated earlier.

Major goal

First, do these contributors actually consider obtaining a successful definition of health and/or disease to be the major goal? Boorse describes his own contribution thus:

¹ Many others have taken part; see, e.g., [7-22]. For mental disorders, see [23-26]. See also [27-28] for a broader framework of the question and more bibliographical references.

“Twenty years ago, in four papers, I offered a unified descriptive analysis of health, disease, and function” [4, p. 4]. Nordenfelt undertakes the same task, even though his strategic choice is to emphasize the concept of health: “my aim is to find a coherent conceptual network for our discourse on health and other medical matters” [29, p. 22]. In a later article, Nordenfelt writes, “[an acceptable theory of health] should be able to provide a definition of the concept of health, as well as an analysis and mapping of several other concepts which are in different ways related to health. This holds, in particular, for the conceptual ‘opposites’ of health, such as ‘illness,’ ‘disease,’ ‘impairment,’ ‘defect’ and ‘disability’” [2, p. xii]. Finally, Wakefield endorses an apparently less ambitious goal in so far as he only tries to give an account of the notion of (mental) health: “This article presents an analysis of the concept of mental disorder” [6, p. 373].

Each of the three main contenders has set a goal for himself. For Boorse, it is a definition of health and disease in somatic medicine; for Nordenfelt, a definition of health in general; for Wakefield, a definition of mental disorder. But the apparent variety of these goals does not prevent them from arguing against each other.

Additional goals and rules

It must be noted that some authors seemingly add rules to the procedure of conceptual analysis, apparently because they are mainly concerned with the beneficial consequences they would like a successful definition to have. For instance, most authors hope that a good definition will help eliminate false positive cases of mental disorders (Wakefield), will “sharpen the borders of the concept of health” [2, p. 11], will resolve controversial cases [1, pp. 13-17], and so on. More specifically, Nordenfelt would like a “theory of health” also to answer the following six related questions [2, pp. 4-5]:

- (1) What are the logical relations between health-concepts?

- (2) What are the logical relations between the concept of health and some other central humanistic concepts?
- (3) What is the relation between human health and the health of other living beings?
- (4) What is the relation between mental and somatic health?
- (5) What is the relation between health and the environment?
- (6) What is the place of health-concepts in science?

According to him, no definition should be considered successful unless it passes this test.

Similarly, Boorse enlists “conceptual issues” that a successful definition should resolve:

“interrelations of health concepts,” “scientific vs. lay concepts,” “vagueness,” “normality vs. positive health,” “reference class,” “protodiseases,” “nosology and natural kinds,” “disease and treatment,” “values,” “mental vs. physical health,” and “cultural relativism about health” [1, pp. 17-19].

All these issues fall within two categories: some of them refer to desiderata of a good definition; the others refer to sets of cases and already proposed criteria that every definition must confront. Although these additional demands do not define the method of conceptual analysis, they help define its extent, in that failing to meet them would enjoin further analysis.

Do attacks actually consist of counter-examples only?

In the controversy over proposed definitions of ‘health’ and ‘disease,’ there seems to be many kinds of arguments. According to my formulation of the rules, those related to conceptual analysis always resort to counter-examples. Is this the case?

Certainly, some attacks explicitly consist of counter-examples. The first parts of Boorse’s “Health as a Theoretical Concept” [5] and Wakefield’s “The Concept of Mental Disorder” [6], as well as most of Boorse’s “A Rebuttal on Health” [4], challenge either the

necessity or the sufficiency of the criteria included in a definition through the use of test cases. For instance, attacks aimed at over-inclusive definitions object to the use of the term ‘disease’ for injuries or deformities² or the inability to swim, fly, or see in the dark like a cat [5, p. 548]. Boorse raises this very objection against Charles Culver et al.'s definition, concerning pregnancy [4, pp. 43-44]—a classic example, along with the one of a teething infant [2, 5-7]. This is also one of Wakefield’s points in his article “Limits of Operationalization” [30], in which he aims to show that Robert Spitzer and Jean Endicott’s definition of mental disorders [25], if applied as such, could lead to a great number of false positive cases. Other examples concern attacks of over-exclusive definitions. In this sense, Boorse objects to a first version of his definition using the counter-example of universal diseases such as “minor lung inflammation,” “tooth decay,” “atherosclerosis,” and thus sets up a slightly different one [5].³

The last subgroup of attacks of this kind has to do with a proposed definition’s inability to specify the nature of a nevertheless clear case of a healthy or pathological condition. This “vagueness” includes both indeterminacies and equivocations. But the important point is that vagueness is an objection as long as it refers to “clear cases,” not unclear or controversial ones. This is the reason why Boorse charges Lester King’s analysis with being vague [5, pp. 547f.] but vindicates his own vagueness [4, p. 19]: “Relevant criticisms are such only if [an] analysis is too vague to classify medically *clear* cases or that it *clearly* misclassifies them...” [4, p. 43; emphasis added].

However, not all attacks explicitly consist in objecting counter-examples. This is the case with logical counter-arguments. For instance, according to Boorse [4, pp. 16-18], Joseph Scadding and William Bechtel criticize his definition as a vicious circle. According to them, Boorse’s definition of “functional normality” contains the notion of “design of an organism,”

² See [14] and reply in [4, p. 41].

³ See [6; 30, p. 166] for a more elaborate example of this kind.

while the notion of “design of an organism” is defined by “functional normality.” Thus, there might be real *logical* inconsistencies in a given definition, and all counter-arguments do not actually consist in counter-examples. I nonetheless know of very few such arguments in this debate, and regardless, suggest that they do not specifically define conceptual analysis, for *all* philosophical analysis must be consistent.

Most counter-arguments that are not explicit counter-examples, however, are not logical, but *conceptual*, charges against a definition. Yet, conceptual arguments invariably come down to highlighting specific properties of a given example, that is, offering a counter-example. Environmental clauses are a good example of this (see, e.g., [1, 2, 4-6, 14, 30-32]). Some argue that they have to be included in a definition of disease, others avoid such clauses, and still others rely on them to criticize a given definition. An example of the latter is offered by Elseijn Kingma [32]. First, she establishes that a “normal function” can only be a “statistically typical causal contribution to survival and reproduction *in a certain situation*” [32, p. 248]. Then she shows that a situation-dependent definition of normal function such as Boorse’s necessarily fails to distinguish what is normal and what is pathological, because in his definition, a means to objectively assess the situations where a given functioning is either normal or abnormal is lacking [32, p. 253]. In fact, this “dilemma” is not a *logical* analysis of Boorse’s definition illustrated by examples, but rather, it is a charge of over-inclusiveness, over-exclusiveness, or indetermination based on a renewed (and convincing) analysis of counter-examples, such as normal/abnormal blood-clotting and elevated heart rate. The second “horn” of Kingma’s dilemma is also equivalent to objecting through counter-examples, which imply the impossibility for Boorse to account for statistically normal but unhealthy functioning: paracetamol poisoning, for instance.

My conclusion is that the debate indeed centers on counter-examples that seemingly do not fit with proposed definitions. For this kind of debate to take place, though, contenders must consider the same set of cases of ‘health’ and ‘disease.’ The next question is: do they?

Do contenders actually take the same sets of cases into account?

Boorse is exemplarily clear in taking the Standard Nomenclature of Diseases and Operations by the American Medical Association as the basis on which to fix the extension of the concept of disease: “This book is invaluable as a compendium of thousands of test cases for an analysis of disease” [5, p. 551]. Nevertheless, Boorse does not blindly take the *Nomenclature*’s contents as determining the extension of ‘disease.’ There are some cases therein, such as macacus ear, which he notes his definition purposefully does not cover and which he thinks should be excluded by a definition of ‘disease.’ Despite these explicit stipulations, he considers that some misplaced objections precisely consist in assigning an arbitrary set of cases to the concept of disease. This is, for instance, what is at stake when one assumes that the concept of disease in medicine is not the absence of health:

Interestingly, many objections seem at bottom to be attacks on the concept of disease, not on my analysis of it. The serious philosophical issues between the BST and its critics are not, I think, about the correct analysis of ‘disease.’ Rather, they are about the prospects for a genuine concept of health—individual, nontypological, positive, or of some other kind—that could differ from the absence of disease, and about what medical theory, practice, or social institutions might be based thereupon. [4, p. 6]

The set of cases Wakefield takes into account is less clearly stated, although this is not particularly surprising given his (moderately) critical stance toward the *Diagnostic and Statistical Manual of Mental Disorders* (DSM):

In a conceptual analysis, proposed accounts of a concept are tested against relatively uncontroversial and widely shared judgments about what does and does not fall under the concept. To the degree that the analysis explains these uncontroversial judgments, it is considered confirmed, and a sufficiently confirmed analysis may then be used as a guide in thinking about more controversial cases. [33, p. 233]

When one appeals to general consensus rather than a professional listing of accepted diagnoses, which cases are to be considered controversial and which uncontroversial? For instance, do uncontroversial cases of non-disease include “normal sorrow” vs. depression [34]? What about homosexuality? Is it a controversial or uncontroversial case of non-disease? This uncertainty does not exclude the possibility of conforming to the requisites of conceptual analysis as long as there is a set of cases about which contenders agree.

Nordenfelt does not accept that nosography provides the canonic set of diseases and thereby the canonic set of healthy conditions. The reason is that “medicine has no monopoly on the concept of health or related concepts. Health, impairment, disease and disability are concepts which are well embedded in ordinary thinking and which have a long non-scientific tradition” [2, p. 1]. As with Wakefield’s, Nordenfelt’s standpoint leaves room for critical assessment of the class of diseases established by medical science and practice. Yet, it is clearer in that it claims the prominence of the lay concept of health over the scientific concept of disease. But from the point of view of the extension, Nordenfelt’s standpoint is less clear than Boorse’s.

Given that the main form of counter-argument consists in providing counter-examples, there would be no way for competing definitions to confront one another if not on shared cases. But do Boorse, Wakefield, and Nordenfelt consider the same cases? It does not seem so, at least at first sight. First, there is the problem of somatic diseases versus mental disorders. Boorse considers somatic diseases but does not take mental disorders into account

[5, p. 543], while Wakefield considers mental disorders exclusively and Nordenfelt's analysis encompasses both: "Although most of the examples employed are drawn from organic phenomena, the concept is designed to cover *both somatic and mental health*" [2, p. xi].

However, despite these apparent differences in subject matter, each of these philosophers considers himself to be making points relevant to the domain considered by the others. Boorse considers his analysis to be equally applicable to the field of mental disorders, if any such disorders exist: "Boorse's basic analysis of normality vs. pathology applies unaltered to mental health on one condition: that physiology have a parallel in psychology.... Mental health exists if, and only if, the human mind can be divided into psychological part-functions with species-typical contributions to survival or reproduction" [1, p. 29]. Conversely, Wakefield frequently uses physiological examples to make his points. Thus, although each author chooses a limited set within the extension of the term 'disease' in order to set up a definition, they nevertheless assume that their particular outcome is applicable to a wider set of examples, and, in the case of Wakefield at least, that counter-examples from this wider set can be used as counter-arguments. They therefore share the wider set of cases, although they may have only, or preferentially, one subset of cases in mind when developing their definition.

From the fact that philosophers of medicine essentially bear the same set of examples in mind (i.e., what everybody would acknowledge are diseases on the one hand, healthy conditions on the other), it follows that debates about a definition of 'health' and 'disease' through conceptual analysis does not consist in a disagreement over controversial cases. There are two reasons for this. The first is that conceptual analysts debate even over the same set of cases, asking not whether but why the mutually agreed on cases are diseases. The second reason is that by nature, this method indeed cannot directly settle controversial cases, for it requires assuming a set a condition belongs to *before* searching for a definition. In the

case of a controversial condition, this would obviously beg the question. An alternative, indirect, way of tackling the issue of a controversial case is to define the term on the basis of a set of uncontroversial cases of, say, diseases, and consider afterward whether the controversial case is or is not a disease. This would be satisfying, if conceptual analysis of a set of uncontroversial cases could produce but one resulting definition. However, if several definitions could match the same set of uncontroversial cases, it would not matter whether they agreed or disagreed on controversial cases. The reason is the intrinsic limit of conceptual analysis: it cannot rule out a specific kind of stipulation. This blind spot of conceptual analysis is considered in the next section.

The general conclusion of this first section, therefore, is that arguments about conceptual analyses of 'health' and 'disease' consist mainly in providing uncontroversial counter-examples to a definition of a term that should successfully account for them.

CAN CONCEPTUAL ANALYSIS DECIDE BETWEEN NATURALISM AND NORMATIVISM?

Traditionally, discussion of how disease should be defined does not focus on the appropriateness of conceptual analysis, as all participants implicitly agree about the utility of conceptual analysis to settle the debate. Rather, the discussion focuses on the divide between naturalism and normativism, where, typically, each side objects to stipulations by the other side. Yet, conceptual analysis has major problems identifying what is stipulation and what is not. In this section, after clarifying the notion of stipulation, I argue that if philosophers of medicine want to determine whether ‘disease’ is a normative or naturalistic term, then conceptual analysis is inadequate and should be avoided. I then sketch an alternative approach to both the problem of defining the term and determining whether it should be defined as a natural fact or as a value-laden condition.

Is stipulation banned from conceptual analysis?

Description and Stipulation

Before proceeding, a few words about ‘stipulation’ are required. This is a complex issue, which cannot be developed at length here.⁴ For the purposes of this paper, it suffices to say that a *descriptive* definition provides information about the *actual* meaning of the term. If a definition makes a claim about how the term *ought to* be used, however, it is a *stipulative* definition. These two kinds of claim are different. The question we can ask about the former is, “Is this definition correct?” Of the latter we can ask, “Is this definition useful?”

At first glance, conceptual analysis seems to ban any form of stipulation. Wakefield observes that certain instances of conceptual analysis “do not stipulate how we should use

⁴ Others have already treated the issue at length; see, e.g., [35-38].

‘mental disorder’ but rather attempt to capture how we do use it” [39, p. 1011]. Nordenfelt seems to understand it in a less contrastive manner, but bans stipulation all the same:

[*lexical* definitions] are definitions aimed at characterizing a *given* concept, a given mode of speech. There is another kind of definition, which can introduce *new* concepts. It is the *stipulative* definition. By giving such a definition one *decides* that a particular term is to have a certain sense. It is indeed possible to define ‘health’ in a stipulative way and introduce a new concept of health. The question is only what use one is going to make of such a concept. If it were completely unrelated to the ordinary concept of health it would not be used in ordinary discourse, and would therefore be of no interest to us. If it were so related, it would have the character of a *technical* concept of health, to be used for particular purposes. [2, p. 8]

Generally speaking, there are three main sorts of stipulation. The first kind of stipulation consists in explicitly suggesting minor alterations to the received use of the term, in the hope that this will be generally accepted: call this “trivial stipulation.” This can be seen in the case of Boorse’s suggestion that macacus ears is not a case of disease. The second kind of stipulation consists in claiming that a specific case, not included in the standard extension of the term, *should* indeed be included, with consequences for the definition to be proposed. I call this kind of stipulation “extensional.” An example would be an ideologue who refuses any definition of ‘disease’ that rules out atheism, fiscal evasion, socialism, or concupiscence.

The last kind of stipulation consists in claiming that a specific meaning *should* be chosen among others, even when all presented meanings fit with the same set of cases. In this last case, everybody agrees on the extension of the term, but not necessarily on its *intension*. I call this kind of stipulation “intensional.” Think, for instance, of the equivalent ways to define terms such as ‘family’ or ‘species,’ even when one has in mind the same determinate set of families or species. *Intensional stipulation* consists in freely using any property, or

lexicon (that is, a set of predicates), which matches a given extension for a concept. A famous example of what such a stipulation can lead to is Plato's definition of 'human being' as a "featherless biped."

I will now briefly consider each of these kinds of stipulation in turn and see whether it really cannot be included in a legitimate conceptual analysis. As we shall see, this distinction will reveal what kind of stipulation conceptual analysis cannot rule out, a weakness that will in turn explain its failure to settle the naturalism-normativism debate.

Trivial stipulation

Boorse, Nordenfelt, and Wakefield all indulge in minor, but clarifying, stipulation. Boorse excludes universal diseases from his definition of disease via stipulation, but seems to consider this a minor issue [4, p. 44]. Nordenfelt, in turn, claims that he *explicates* usage, that is, practices "logical reconstruction" of the relations between terms and sharpens their references or extension: "Thus, there is an element of stipulation in the present program, though the basis is an already existing concept of health" [2, p. 11]. He continues:

The purpose of a conceptual analysis is not only to mirror given concepts of praxis as sensitively as possible. The purpose is also to find fruitful simplifications which can sharpen the concepts in their future scientific and technical contexts.... We consider it legitimate to make some marginal stipulations in the characterization of a concept, if this involves some significant theoretical simplification. It is particularly legitimate to make such a stipulation in those cases where the praxis is unclear, or when our own linguistic intuitions do not give unequivocal results. [2, p. 177].

I have examined elsewhere Wakefield's own qualified version of conceptual analysis [37]. As both Boorse and Nordenfelt do, he accepts trivial stipulation. Generally speaking, engaging in trivial stipulation should not be regarded as a failure in conceptual analysis, as

long as it only consists in additions opponents would readily accept. The reason why is that whatever the true concept is, everybody agrees that the case is a conceptual anomaly. If this is not the case, and the stipulations are large enough to be controversial, one should consider the possibility that a definition is not the result of conceptual analysis anymore.

Extensional stipulation

Extensional stipulation (in my context) consists in asserting that something usually considered a disease is in fact healthy or vice versa. In other words, it consists in either including cases of consensually healthy conditions, or excluding cases of consensual diseases from the set of diseases. Saying that pregnancy is a disease, according to Boorse's caution quoted at the beginning of the paper, is an example. Claiming that septicemia is not would be another. A derived form of such extensional stipulation consists in considering that a controversial condition is actually a settled case of health or disease. During the heated debates among psychiatrists over homosexuality in the 1970s, *taking for granted* that homosexuality was (or was not) a disease would have been a stipulation of this latter kind.

Obviously, conceptual analysis forbids extensional stipulation. Extensional stipulation amounts to selecting one's own set of cases on which to build one's definition of a term. If the goal of conceptual analysis is to arrive at an understanding of a term that is used by others (as well), one can hardly proceed by choosing one's own account of what the term covers.

Intensional stipulation

We have seen that a conceptual analysis can include trivial stipulation but not extensional stipulation. What of intensional stipulation? Can an adequate conceptual analysis engage in it? Intensional stipulation consists in a controversial pronouncement that a term ought to be defined in an arbitrary or unexpected way. Suppose that two competing

definitions of a term are both reasonably successful with regard to matching the given extension of a term, one of them being arbitrary, unexpected, or even only focused on secondary or connotative properties of the phenomenon. Consider, for instance, two definitions of ‘woman,’ one being laid out in biological terms and the other in cultural terms, both matching the same set of cases. Conceptual analysis, which consists mainly of controlling a proposed meaning for the term with a given extension, as I have established, cannot identify one meaning or the other as “mere stipulation.”

Suppose now that one has gathered *all* uncontroversial cases under the extension of the term, ‘being a woman.’ The only way to refute one of the definitions is to extend the set of cases so that a new case is put forward that contradicts the criteria of one definition, while it allows the success of the other. One will typically search for a new case of a “biological woman” that is not a “cultural woman” (or the converse) to prove the other side wrong. Yet, since, by hypothesis, all uncontroversial cases of “woman” are given, the only additional cases available are controversial ones. Assuming that this new individual is a woman is indeed extensional stipulation. One side decides in favor of it while the other decides against it on the basis of the intension that each side assumes is the term’s true meaning. Conceptual analysis cannot decide between the two hypotheses.

The conclusion is that to practice conceptual analysis, it is necessary to allow for possible meanings to be proposed. However, once this is allowed, conceptual analysis will not decide between two reasonably successful competing definitions.

Conceptual analysis, naturalism, and normativism

This last point on intensional stipulation is very relevant to the case of the naturalism/normativism debate, insofar as it is framed in the terms of the conceptual analysis of ‘health’ and ‘disease.’ Wakefield suggests that the two controversies, i.e., the conceptual

analysis of ‘health’ and ‘disease’ and normativism versus naturalism (“the fact/value debate,” in his terms), can be settled together: “To construct a more adequate analysis and resolve the fact/value debate, I propose a hybrid account of disorder as harmful dysfunction” [6, p. 374]. However, these questions cannot, in fact, be linked in this way, because the choice between naturalism and normativism cannot be driven by conceptual analysis, but must be made prior to it. This choice implies either extensional or intensional stipulation.

Two distinct definitions of ‘disease’ must disagree about either the extension or the intension of the term. They will differ extensionally when, for instance, one holds that mental disorders, contraception, or homosexuality is a disease, while the other does not. In this case, conceptual analysis cannot help us decide between the two definitions because this method must presume, but cannot set, the correct extension of the term. Therefore, either it is acknowledged *by some means other* than conceptual analysis (acknowledgment of defeat, a counter-intuitive case, *argumentum ad populum*, and so on) that one of them is wrong, or it remains undecidable.

If two definitions do not differ on the extension they give to the term ‘disease,’ but do on the intension of the term, then conceptual analysis cannot decide, because it cannot identify one meaning or the other as preferable, as shown above. A first illustration of this problem is the fact that the same diseases are likely to correspond, at the same time, to a practical and to a theoretical concept [4, p. 44-51]. Here, “practical” means that the defining properties of pathological conditions are inability, suffering, undesirability, and so on, that is, properties related to human action. “Theoretical” means that defining properties of pathological conditions are “dysfunction,” “species design,” “statistical normality,” and so on, that is, related to biological features. If every case of “practical” disease is also a case of “theoretical” disease, and the converse, then the difference lies in meaning, not in extension, and cases of disease could, in principle, be analyzed by their practical as well as theoretical

properties. The criterion that could decide which “takes primacy” or is “more fundamental” obviously cannot come out of conceptual analysis. The discussion, therefore, can go on endlessly between the partisans of an “action-theoretic approach” and those of a biomedical approach.

A second illustration is provided by the stipulative element of Wakefield’s “harmful-dysfunction analysis,” which I have examined elsewhere [37]. According to the harmful-dysfunction analysis, a condition is a mental disorder if and only if it is both harmful and caused by a biological dysfunction, where dysfunction means the failure to produce an effect selected during evolution. Wakefield seems to admit that his reliance on an evolutionary definition of “function” to define “mental disorder” constitutes stipulation since it is doubtful that any psychiatrist needs to think of the evolution of the human species in order to decide that schizophrenia or bipolar disorder involves some kind of dysfunction. Yet, this stipulation would (according to him) be rather unobjectionable to anyone not rejecting evolutionary biology, “the only plausible scientific account that presently exists of how the natural functions of a mechanism can explain the existence and structure of the mechanism” [31, p. 375]. Since this kind of stipulation involves a decision on the meaning, and not on the cases, it is intensional stipulation. The problem is that any contender can propose any stipulative criterion as long as it does not imply a controversial move inside or outside of the class of diseases (in the present case, of mental disorders). Therefore, although from the point of view of meaning or intention, there is a difference between whether such a criterion is evolutionary or borrowed from a carefully elaborated notion of intentionality in the field of mental disorders [41], as far as conceptual analysis is concerned, there is no difference in that both proposed definitions match the given set of cases.

It results from all this that the only definitions that conceptual analysis can rule out are those that nobody would hold, because of some counter-intuitive consequence nobody

would support. This can be a real achievement of conceptual analysis, although a modest one, but it does not suffice to settle the debate. The upshot is that there are three possible outcomes of the conceptual analysis approach for the debate over naturalism vs. normativism: (1) nobody actually wins either because every definition fails somewhere or because of controversies over the extension of the term;⁵ (2) conceptual analysis can achieve both a naturalist and a normativist definition of health and disease; or (3) one definition wins and all the others lose, i.e., acknowledge defeat.

Given these possibilities, consider that the current situation is as follows: (i) the application of conceptual analysis has not yet settled the debate over naturalism and normativism, since naturalists and normativists still disagree; (ii) naturalists and normativists alike think that their supported definition fits reasonably well with the given extension of the terms ‘health’ and ‘disease’; and (iii) naturalists and normativists alike think that their opponent’s definition does not fit sufficiently the given extension of these terms.

It seems that the only explanation of all three aspects of this situation is that the naturalist or the normativist, or both, have failed so far to apply conceptual analysis. Possibility (3) entails that it is either one or the other. Therefore, someone made a mistake somewhere, but each one is convinced that he or she has the right definition and suspects it is the other that is mistaken. Possibility (1) entails that both are mistaken but that conceptual analysis is still the right method. On the contrary, my contention is that possibility (2) is most likely the case: nobody has made major mistakes in conceptual analysis, so that both accounts of ‘health’ and ‘disease’ have indeed achieved what is achievable through conceptual analysis. But it is simply impossible to decide between them by further application of conceptual analysis.

⁵ It is not supposed here that nobody *can* win, as Nordby argues in [42].

How then should we decide between naturalism and normativism?

This does not mean that the debate cannot be settled. The remainder of this article suggests how it could be. It starts with a triple statement. First, any naturalist would acknowledge that in science, many terms are borrowed from vernacular language and defined anew by scientific stipulation. Moreover, any naturalist would also acknowledge that vernacular language is often value-laden (think of the pre-Darwinian connotation of ‘man’ as opposed to the Darwinian definition of ‘man’). Finally, any naturalist would readily admit that some scientific terms, first referring to natural facts only, become value-laden *also* (think of the current connotation of ‘radioactive,’ for instance). In particular, any naturalist would acknowledge both that ‘disease’ historically referred to undesirable conditions and was therefore a normative term, and that in the light of the consequences of this kind of condition for humans, ‘disease’ will always be normative in the same sense as ‘radioactive,’ that is, regarding not what it consists in, but what its connotation and consequences are.

On the other hand, any normativist would reckon that although ‘gold’ has normative properties (being precious and so on), it also has a consistent and proper definition as a natural fact, say, the element with the atomic number 79. Any normativist would also reckon that when one disease comes to be known in its mechanisms and the corresponding label as that of a consistent kind, a scientific definition of this disease as a natural fact ensues. Some normativists would nevertheless still assume that any natural fact is always a social construction, and that ‘gold’ essentially means a specific precious metal and accidentally means the element with the atomic number 79. At least, these constructivists must agree that there is some difference between two kinds of so-called “constructed facts,” those that work in scientific explanations, predictions, and laws, and those that do not. The first only naturalists call “natural facts.”

There is thus significant background agreement between naturalists and normativists. Nonetheless, there are debates between them over the scientific redefinition of some terms referring to particular diseases. The cause of these debates is that not every term can be scientifically redefined, nor every condition, *naturalized*. In Hippocratic medicine, for instance, epilepsy became a natural instead of a supernatural fact, although normative connotations remained. Maybe there still is a normative concept of epilepsy (as a specific undesirable condition), but there certainly is now a natural concept of epilepsy (as a specific dysfunction in the brain). Turning now to the contemporary concept of depression, it is still controversial that it is a naturalizable condition. Naturalizing it involves many steps, including successfully framing the condition in semiological terms, tracking its etiology, and understanding its pathophysiology. As long as this is not achieved, it is not clear that the *natural* concept of depression corresponds to real facts. Yet, there is a normative concept of depression (which suffices to consider it to be a disease according to normativists about *disease*, not according to naturalists about disease). But the controversy on depression is whether there can be, or not, a consistent *natural* concept of depression.

These examples (epilepsy, depression) refer to specific diseases, some of which all would acknowledge to be naturalizable. When naturalists and normativists confront each other on such questions, the best tool to settle the debate is obviously not conceptual analysis, that is, proposing definitions and confronting them on cases. It is, rather, examining whether there is a consistent natural concept of each particular condition. But it deals with specific diseases, not disease as such. My proposal is to reframe the naturalist/normativist debate over *disease* in the same manner, as a debate over the naturalization of disease.⁶

What does the naturalization of disease involve? At the lowest level, it involves a series of consistent, specific, and operational definitions of disease across the many

⁶ See [44] for further details.

disciplines medical science consists in. It is primarily a question of whether there are consistent natural definitions of *types* of diseases such as infectious, autoimmune, genetic, neoplastic, etc. Several possibilities emerge: these definitions could only reflect historical domains of medical practice, such as infectious disease medicine, immunology, medical genetics, and oncology, rather than neatly constructed natural kinds. It might also be that the only consistent kinds of diseases are diseases according to various scientific approaches such as epidemiology, physiology, molecular biology, or psychiatry. If enough of these definitions could be found to be consistent, this would make the case for a moderate version of naturalism.

A more demanding version of naturalism would imply one general *scientific theory* of disease. Different versions of a general theory of disease have been proposed in the past: Galen's humoral theory, Descartes' mechanistic theory, Broussais' theory of irritability, Groddeck's psychosomatic theory, etc. If a truly satisfactory theory emerged now, the case would be very strong in favor of naturalism. For normativism is an interesting position only insofar as it assumes that disease is nothing but a normative term (constructivism). Its strength comes mostly from the fact that there is currently no general theory of disease in medicine. If 'disease' were to become a natural fact, notions such as undesirability, inability, and so on would stand as mere consequences or connotations of the natural condition of disease and the debate would have no remaining interest.

In what does the philosopher's job consist, if not in confronting the proposed intension with the given extension of a term? I propose gathering the most general features of medical theories and combining them first into coherent, encompassing pictures of disease according to types, domains, and activities, then, into one single definition of disease. It is a theoretical work scientists are not likely to undertake by themselves, because of the high degree of specialization in medical research. It could involve such approaches as theoretical

biology or systems biology. It consists in trying to model disease in general as a special kind of process in living beings rather than trying to account for current medical judgments. This conceptual work on scientific knowledge demands much more specificity than the conceptual analysis of pathological conditions that philosophers can manipulate while ignoring what scientists know and conjecture about their inner working. This attempt might not be successful, either because we lack knowledge or because the concept of disease cannot be naturalized. We cannot know before trying. At least we might discover where our concept of disease as a natural fact lacks consistency or completeness.

CONCLUSION

There is a serious flaw in the possible achievements of conceptual analysis of the terms ‘disease’ and ‘health.’ Although it rather wonderfully forces philosophers to confront one another, it is nevertheless hopelessly unlikely to decide between two reasonably successful definitions of ‘disease’ or ‘health.’ Thus, resorting to conceptual analysis in order to choose between naturalism and normativism is probably doomed to failure. The reason for such a flaw is that any philosopher is free to choose a set of descriptive predicates in order to draw the right lines between cases of ‘health’ and cases of ‘non-health’ on the one hand, and cases of ‘disease’ and cases of ‘non-disease’ on the other.

This does not imply, however, “that ‘conceptual analysis,’ taken as a search for necessary and sufficient conditions for the application of terms or as a search for criteria for application by reference to which a term has the meaning it has, is a confused program, a philosophical chimera, a squaring of the circle, the misconceived child of a mistaken view of the nature of language and thought”, as Ruth Millikan puts it [38, p. 15]. Nor does it imply that conceptual analysis is useless, for it seems to be part of a wider and more complex analysis conducted by philosophers (and maybe scientists too). My point is not that the

debate between naturalism and normativism cannot be decided. Actually, it is a historical fact that this debate came to prominence *before* contenders thought about using conceptual analysis to resolve it. Some of them thought that it would provide the only way to find agreement. This, I think, was the wrong move. In order to prove naturalism or normativism right, another method has to be embraced.

My suggestion is that we focus instead on the naturalization of the concept of disease. If it succeeds, then ‘disease’ is a natural term with normative connotations. The philosopher’s job is to scrutinize the theoretical sense of ‘disease’ throughout medical science and decide whether a consistent, specific, and operational concept of disease exists therein.

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