Ljiljana Radenović

DEFINING DISEASE:
DESCRIPTION AND EXPLANATION IN THE NATURALIZATION
OF THE CONCEPT OF DISEASE

SUMMARY: In his paper “The naturalization of the concept of disease” (2015) M. Lemoine offers a constructive critique of the naturalist/normativist debate. He argues that philosophers of both camps attempt to define the concept of disease by relying on the pre-naturalized notion of the disease. These pre-naturalized concepts Lemoine identifies with mere phenomenal descriptions of the disease while naturalized ones defines as those that involve causal explanations. My main goal in this paper is to show that such distinction cannot be found within ontogenetic cognitive development or in the history of medical knowledge and as such is not viable. At the end of the paper I offer a different account of what went wrong with the naturalist/normativist. Unlike Lemoine, I propose that the definitions of disease that naturalists and normativists come up with are the result not of the analysis of some descriptive concepts of disease but rather of the armchair analysis with no footing in everyday practice of ordinary people or medical practitioners.

KEYWORDS: disease, pre-naturalized concepts, naturalized concepts, description, explanation

Philosophers of medicine usually define disease in one of two ways. On one side, there are naturalists, such as Boorse (1977) who insist that the disease should be understood as a real phenomenon occurring in nature, affecting living organisms, and as such need to be defined in naturalist terms. On the other hand, normativists, such as Sedwick (1973) or Engelhardt (1976) argue that the distinction between health and disease makes sense only when we think about what is important to us as human beings, namely that we desire to be healthy and not sick. Accordingly, for normativists disease and health are first and foremost value concepts. This is not to say that normativists deny that there are natural causes of diseases. Rather, they argue that we identify diseases as undesirable albeit natural states and hold that disease judgments (i.e. judgments about whether a particular physiological or psychological state is a disease or not) are value judgments.

In his paper “The naturalization of the concept of disease” (2015) M. Lemoine offers a constructive, and in many ways promising critique of the naturalist/normativist debate. He argues that philosophers of both camps attempt to define the concept of disease by relying on
so called disease judgments. In everyday life laypersons and doctors alike make such judgments because we all need to, if nothing else, identify (physiological and/or psychological) states that require medical attention. Now, by analyzing disease, judgments naturalists, on one hand, aim to find general natural phenomenon common to all diseases, and provide a naturalist definition of disease. Normativists, on the other hand, aim to identify the underlying negative value common to all diseases. But, Lemoine argues that what they both do (not only normativists as naturalists like to believe) is rely on the pre-naturalized notion of the disease. These pre-naturalized concepts Lemoine identifies with mere phenomenal descriptions of the disease; descriptions that we all implicitly use when making disease judgments. He proceeds to argue that philosophers of medicine need to focus on naturalized concepts of disease instead (i.e. concepts that go beyond descriptions and encompass causal explanations of the disease) if they are to make any progress in understanding it. What this means is that we need to switch from contemplating disease judgments to thinking about disease explanations in our attempts to provide a general definition of disease. This inquiry will lead us into a far more detailed investigation of medical explanations of individual diseases.

My main goal in this paper is to take a closer look at Lemoine’s distinction between pre-naturalized and naturalized concepts of disease. While I agree with him that the naturalization of the concept of disease requires serious research into the causal explanations of the particular diseases, I find his distinction between pre-naturalized concepts (i.e. those that are supposed to be mere phenomenal descriptions of the disease) and naturalized concepts (those that involve causal explanation) contentious. Thus, I plan to examine if such a distinction makes sense within developmental psychology as well as in the history of medical knowledge. Only a brief overview of some empirical findings in concept acquisition and the history of medicine indicates that this is hardly the case. Firstly, empirical research in developmental psychology suggests that our concepts are never learned or formed on perceptual bases only. As such they are never mere descriptions, but always encompass certain causal explanations. Secondly, if we go back in history to examine whether pre-naturalized concepts of disease, as Lemoine defines them, were accepted and/or implicitly utilized among laypersons or medical practitioners in the past we will not be able to find them either. To illustrate this I focus on the medical school of Empiriks whose teachings seem to rely on the distinction between a perceptually based concept of a disease and the one involving causal explanation. The Empiriks did insist that doctors should focus on what they could perceive in the patients (their symptoms and signs), not on the hidden workings of their bodies (that they will never be able to truly know) if they are to find the cures. But, as we will see, their nosology (their classification of the diseases), is based on a particular, mostly Galenian theory, relying on the Galenian causal explanations of diseases. So, even in the teachings of the Empiriks, the distinction between explanation and description is far from being clear-cut. In addition, a brief look at the way literate men understood and approached disease in the past illustrates that the pre-naturalized (i.e. merely descriptive) notion of the disease is hard to find. Combining these insights should
Ljiljana Radenović

put into question the belief that there is a clear-cut distinction between phenomenal descriptions of diseases and their explanations. What this means is that, if we are still going to make a distinction between pre-naturalized and naturalized concepts of disease, then such a distinction needs to be made by some more subtle criteria and cannot be reduced to the description/explanation distinction that Lemoine suggesting.

I end the paper with some remarks on the origin and the nature of conceptual analysis that both naturalists and normativists use in order to reach their definitions of disease. Here I offer a different account of what went wrong with the naturalist/normativist debate from the one that Lemoine develops. As we have seen, his account is based on the distinction that he makes between pre-naturalized (descriptive) and naturalized (explanatory) concepts. This distinction has turned out not to be viable. Unlike Lemoine, I propose that the definitions of disease that naturalists and normativists come up with are the result not of the analysis of some descriptive concepts of disease but rather of the armchair analysis with no footing in everyday practice of ordinary people or medical practitioners. I conclude along with Lemoine that the question what disease is in general as posed by naturalists and normativists only makes sense if it is based on ongoing medical research. So, instead of practicing conceptual analysis, philosophers of medicine need to ask what particular diseases are and how medical sciences classify and explain them. Only from there they can hope to get a better sense of what disease is and to what extent this term is value laden.

1. The naturalist/normativist debate and Lemoine’s critique

For naturalists, disease is a real natural phenomenon and as such should be defined in naturalist (value neutral) terms. As we will shortly see, some naturalists such as Wakefield (1992) do allow for values to enter such a definition, but their main focus is still on the natural phenomena rather than on our human perception of the disease. Furthermore, some naturalists such as Boorse (1977) believe that their definition of disease captures only the meaning of disease used among medical scientists, while others such as Wakefield (1992) and Reznek (1987) believe that the concept of disease that they are after is shared among medical professionals and laypersons. Now, those who believe in one unified concept of disease aim to do conceptual analysis across everyday use, while those like Boorse are committed to the analyses of medical usages of the concept of disease. In the last section I will cast some doubt on whether their conceptual analysis is really based on medical and/or everyday use. But, for now, it is important to note that regardless of the differences, naturalists’ definitions usually involve (arguably value neutral) concepts such as statistical abnormality, homeostasis, fitness, adaptation, biological dysfunction and the like. By using concepts grounded in biology they hope to naturalize the concept of disease and provide a descriptive (i.e. value free) definition of disease.

Here are two examples of naturalists’ definitions of disease, Boorse’s and Wakefield’s. The former aims to be purely descriptive while the latter includes the normative part but assigns it a minor role.
“Health in a member of the reference class is normal functional ability: the readiness of each internal part to perform all its normal functions on typical occasions with at least typical efficiency. A disease [later, pathological condition] is a type of internal state which impairs health, i.e., reduces one or more functional abilities below typical efficiency.” [Boorse, 1977, p. 562]

“A condition is a disorder if and only if (a) the condition causes some harm or deprivation of benefit to the person as judged by the standards of the person’s culture (the value criterion), and (b) the condition results from the inability of some internal mechanism to perform its natural function, wherein a natural function is an effect that is part of the evolutionary explanation of the existence and structure of the mechanism (the explanatory criterion). [Wakefield, 1992, p. 384]

Like naturalists, normativists have developed weaker and stronger versions of disease definitions. According to the stronger version disease is defined in value terms only and is compared to the concept of a weed. We all know that different people treat dandelions differently: some of them think of it as a weed while others treat it as a beautiful flower. Strong normativists, such as Sedwick, argue that the concept of disease as no different. Along these lines, Sedwick says:

“Outside the significances that man voluntarily attaches to certain conditions, there are no illnesses or diseases in nature. ... Are there not infectious and contagious bacilli? Are there not definite and objective lesions in the cellular structures of the human body? Are there not fractures of bones, the fatal ruptures of tissues, the malignant multiplications of tumorous growths? ... Yet these, as natural events, do not — prior to the human social meanings we attach to them — constitute illnesses, sicknesses, or diseases. The fracture of a septuagenarian’s femur has, within the world of nature, no more significance than the snapping of an autumn leaf from its twig.... Out of his anthropocentric self-interest, man has chosen to consider as ‘illnesses’ or ‘diseases’ those natural circumstances which precipitate the death (or the failure to function according to certain values) of a limited number of biological species: man himself, his pets and other cherished livestock, and the plant-varieties he cultivates for gain or pleasure. ... Children and cattle may fall ill, have diseases, and seem as sick; but who has ever imagined that spiders and lizards can be sick or diseased?” [Sedwick, 1973, p.30-1]

For weak normativists, a disease is a bad condition that needs to satisfy other descriptive, biological criteria. So, like weak naturalists they combine descriptive and normative parts in their definitions. Engelhardt’s definition is a good example of such compromise:
“[A]ny physiological or psychological processes or states not under the immediate control of a person which (1) preclude the goals chosen as integral to the general life of humans (inability to engage in the range of physical activity held integral to human life); (2) cause pain (if that pain is not integral to a process leading to goals held to be integral to human life); (3) preclude a physical form that other humans would hold to be normal (not deformed) — will count as diseases. [Engelhardt, 1976, p136]

Without closely examining the arguments and counter arguments for naturalism or normativism, Lemoine sets out to see if there is something wrong at the very core of this debate. After closer inspection of the naturalists position, Lemoine finds that their understanding of what naturalization of a concept involves is problematic. In other words, he argues that the process of naturalization in naturalists’ view is not really what it means to naturalize the concept. Naturalists construe their definitions of disease as biologically based and in this way consider them to be automatically naturalized. However, Lemoine proceeds to argue that this is not really sufficient for the complete naturalization of the concept. To see why he thinks this needs some stage setting.

His critique is coming from the distinction that he makes between pre-naturalized and naturalized concepts. Pre-naturalized concepts are the ones that refer to phenomena and are used to describe the phenomena. Naturalized are the ones that are used to explain how the phenomena occur. Furthermore, he holds that the distinction between pre-naturalized and naturalized terms corresponds to the distinction between disease judgments and disease explanations. That is, pre-naturalized ones are used in disease judgments while naturalized ones are used in disease explanations. Since both naturalists and normativists analyze disease judgments when trying to provide a definition of disease they all, in fact, rely on pre-naturalized terms in their definitions. In this way naturalists seem to be mistaken when they believe that, unlike normativists, they are the ones offering a naturalized definition of disease.

Lemoine proceeds to argue that this kind of engagement in the analysis of pre-naturalized terms is not something philosophers of medicine should do. For him our main goal should be to look at disease explanations when trying to define disease and not to focus on disease judgments. Only if we can ground our definition of disease in disease explanations our definition would be naturalized not pre-naturalized. But, this means that we need to undertake extensive research of medical sciences and the way they explain various diseases. Only after such a detailed survey will we be in a position to see whether there are some commonalities that we, as philosophers, could draw for various disease explanations. If so, that might contribute considerably to our understanding of the concept of disease in general.

It is important to note that for Lemoine the distinction between disease judgments and disease explanations does not translate into the distinction between laypersons’ and medical notions of disease. According to him, disease judgments belong to our everyday practice as well as the medical one. In other words, both laypersons and medical profes-
ionals often differentiate between disease and health by relying on disease descriptions. This plays an important role in our lives as we really need to know when to ask for medical help while doctors need to be able to quickly identify when we need it. This is important to keep in mind because some naturalists (e.g. Boorse, 1977), as we have seen, aim to confine their analysis of the concept of disease to the disease judgments of medical professionals. However, their analysis is still the analysis of disease via disease judgments not via explanations and as such, according to Lemoine, is still pre-naturalized.

Given the importance that the distinction between pre-naturalized and naturalized concepts plays in Lemoine’s argument, we should take a closer look at it. The most important difference between them, as we have seen, is that the former refer only to observed phenomena while the latter refer to the usually hidden, underlying causes that bring about the phenomena. Lemoine argues that it is a common strategy in sciences to start with the observed phenomena, then, try to provide an explanatory model for it. In other words, when doing science we aim to provide some kind of explanation for how and under which circumstances these phenomena occur. It is important to keep in mind that the words we use to refer to the phenomena can both describe the phenomena and be related to a particular explanatory model. This means that scientists do not have to come up with new vocabulary every time they provide an explanation of the phenomena. In their explanatory models they can, indeed, use the words that have been previously used only for descriptions. According to Lemoine, this is how naturalization of the concept takes place. That is, relating a certain word to a particular explanatory model is the way to naturalize a word.

There is another interesting feature of the naturalization process. In this process scientists might change the way they classify phenomena. Some entities that they initially thought belonged to a particular category might be excluded from that category after naturalization while some new ones might be included. For instance, in the process of naturalization of the word ‘fish’ the word ‘fish’ stopped referring to everything that swims in the sea (i.e. dolphins and whales turned out to be mammals not fish). Sometimes, the extension of the term does not change when naturalized like in the case of the temperature. Yet, in some other cases some words (that were thought to refer to certain entities) entirely disappear along with these entities. This happened with the term and the substance of phlogiston (a substance that was thought to be heat and was used to explain how material objects warm up). Both, the term and the entity are history now.

At this point, it is important to notice an implicit assumption in Lemoine’s argument. It seems that his analysis presupposes that, unlike naturalized concepts, pre-naturalized concepts are based on observed features of objects, i.e. they are based on their surface similarities. Such perceptual similarities are then our classifying criteria, i.e. we use these observable features to put certain entities in one group not in some other. Now, when the term is naturalized, the way we do the grouping changes: after naturalization we do it by relying on the inner structure and the inner (unobservable on the surface) workings of the object (Thompson, 2011).
For Lemoine all of the aforementioned points apply to medical sciences as well. Thus, medical practitioners start off with a description of the diseases: i.e. their observable signs and symptoms. Terms used in such descriptions then get naturalized when medical scientists relate them to particular explanatory models of diseases. Medical explanations, like other scientific explanations, need to identify natural causes of the diseases.

But, isn’t this what all naturalists think? It seems not, so let’s revisit and make clear some of the main points of disagreement. Unlike most naturalists, Lemoine argues that we need to go into details of medical explanatory models (causes and mechanisms of the diseases) if we are really interested in naturalizing the concept of disease. As we have seen, most naturalists do not agree. That is, most naturalists start off with the assumption that it is philosophers job to provide a definition of disease (in general), but they also assume that the knowledge of the particular theories about individual diseases is not necessary for this job to be done. What philosophers need to know is only that there are some (natural) inner workings taking place in the organism that cause a particular pathological condition. So, when we take a look at e.g. Wakefield’s definition of disease we can see that he defines disease as a pathological condition that evolutionary selection did not select for. This is all we need to know to define disease. The etiology of particular diseases is of no interest to him. The same goes for Boorse’s definition. The only important thing for Boorse is that we know that there are some underlying processes causing the disruption of the normal functional ability. No other details about the causes are necessary nor needed for the understanding of the disease in general.

To be fair Boorse also holds that the very term “naturalism” has been unfortunate and should be replaced by “descriptivism”. Descriptivists like himself aim to describe and find what is common to many instances of the disease as a natural phenomena. For Boorse, our quest for the definition of disease is exhausted by the general description of the diseases that medical professionals use in their practice. But, as Lemoine correctly notices, normativists are in some sense descriptivists too. They are describing what general disvalue people attach to illness. Both groups, in fact, focus on terms that we commonly use in identifying and describing the diseases. But, for Lemoine, this practice is not useful and will not help us understand the nature of the disease better. Along these lines he says:

“A naturalist in the philosophy of medicine trying to define ‘disease’ should not gather terms from a common understanding of disease and try to refine the meaning – defining what ‘function’, ‘organism’, ‘species’, or ‘normal’ mean for instance. Instead, she should investigate biomedical research on diseases and look for more general facts and theories that possibly define disease in general.” [Lemoine, 2015, p. 21]

Thus, Lemoine concludes that in their line of work, philosophers of medicine, even those who call themselves naturalists, rely on nosology (i.e. a list of conditions identified
as diseases based on their signs and symptoms) not on pathophysiology or psychopathology; namely medical disciplines that provide actual explanations of the particular diseases. For Lemoine this kind of nosology cannot help us in classifying diseases into genetic, infectious, neurological and the like, nor can it give us etiological, anatomical or some other criteria for such classification. In this way both naturalists and normativists operate with pre-naturalized concepts. The only difference between the two is in the emphasis they put on the likelihood of naturalization of the defining features of the disease. For naturalists the defining features such as ‘dysfunction’, ‘adaptation’, ‘fitness’, ‘evolution’, ‘statistical’ etc. are likely to be naturalized. This is not the case for normativists when defining terms such as ‘inability’, ‘evil’, ‘happiness’, ‘harm’, and so on.

Lemoine’s critique of the current debate seems to be on the right track. His conclusion that our philosophical analysis needs to take into account real medical research on the etiology of diseases (provided we want to understand disease better) looks almost like common sense. But, even though I agree that in order to understand better what disease is, we need to take a closer look at what medical sciences tell us about their causes, I will now turn to some problems in Lemoine’s analysis; namely, to the distinction he makes between descriptive and explanatory terms. I will argue that such a distinction itself is the result of a philosophical conceptual analysis not something that can be found in a child’s concept acquisition (i.e. human ontogenetic development) or in the history of medicine. That is, I will argue that our concepts are always explanatory and never merely perceptually-based in the same way our nosology of the diseases has never been mere description of certain medical conditions with no causal explanations. In a nutshell, I hope to show that our descriptions of the phenomena are always accompanied with certain casual explanatory framework. This is the case with children, laypersons, and medical professionals alike.

2. Lessons from developmental psychology and the history of medicine

Let me start with our psychology1 first. The debate that could help us understand the nature of the distinction between descriptive and explanatory concepts (and if there are pure descriptions of the phenomena as opposed to explanation) is the debate about concept acquisition in children and adults. It does not come as a surprise that the theories of concept acquisition are explicitly or implicitly based on our theories of concepts so let us take a brief look at those.

Two theories of concepts have dominated developmental psychology so far: the similarity based approach and the theory view of concepts. According to the similarity based theories, concepts are understood as some sort of feature lists and are characterized by a probability that certain features will be instantiated by the class members, where the ‘typical’ class members have more characteristic properties than do the ‘atypical’ ones. Our

---

1 This segment on concept acquisition is taken and modified for the purposes of this paper from Lj. Radenović, “Origins of abstract reasoning: Beyond empiricist and nativist theories of concept acquisition and categorization”, Filozofski Godisnjak, 22, 2009, 57-74.
decisions regarding category membership are based on graded similarity rather than the satisfaction of a set of necessary and sufficient conditions.

The proponents of the theory view of concepts argue that the similarity-based theories are not wrong but insufficient to account for the structure of our concepts as well as for the ways we form these concepts (see e.g. Murphy 1993, Lakoff 1987, Medin and Wattenmaker 1987). They argue that concepts should not be thought of as a mere list of features. To fully understand a person’s concept, one must understand a person’s knowledge of the domain in which this concept is embedded - the person’s theory of the domain in which the concept plays a particular explanatory role. For instance, the reason we group animals and artefacts into two different categories is not grounded on their perceptual dissimilarity but their different origin, causal powers, the material they are made of and the like. If we classified them as the same, we would lose an important distinction that helps us understand why certain objects (in this case animate and inanimate) ‘behave’ differently in the world. Now, if the role of concepts is first and foremost explanatory, their structure and origin cannot be explained by the perception of similarities between objects. In other words, according to the theory view of concepts “we categorize not on the basis of similarity cluster, but on the basis of selecting the concept that best explains the instance to be categorized” (Hampton, 2001, p.16).

The basic problem facing any theory of concept acquisition and category development is to explain how the infant learns the criteria for classifying objects into different categories. If, on the one hand, we assume that the infant is categorizing on the basis of perceptual features that objects have in common (i.e. according to some sort of feature analysis) then we are faced with the problem of how the infant knows what the relevant features are. All theories of concept acquisition that presuppose the similarity-based theory of concepts need to solve this problem. If we assume, on the other hand, that the way a child forms concepts depends on her current theory of the domain we must explain how the formation of first concepts gets off the ground, given that the child at the beginning of the learning process does not have any background knowledge, theory, or cognitive models that would help her.

The standard way to account for a child’s ability to perceive similarities between objects and between events is to postulate that such ability is innate. According to this view, the first concepts that children form are the result of ‘rough and ready’ processing of similarities. Concepts that capture non-perceptually based features of objects (such as what they are made of, how their ‘insides’ relate to their causal powers and the like) are more complex. Children develop such concepts only when they already have similarity-based categories in place. Many developmental psychologists have endorsed various versions of this position (Vygotsky 1962, Werner and Kaplan 1963, Inhelder and Piaget 1969, Pleistad 2000, 2001).

However, it has been frequently argued, for conceptual as well as for empirical reasons, that the concept of similarity, as proposed by the similarity-based theories of concepts, is a poor foundation for a viable theory of concept acquisition. Firstly, similarity relationships among sets of entities depend heavily on the particular weights given to individual properties or features, but what counts as an important feature depends on the con-
text. Thus, any two entities can be arbitrarily similar or dissimilar, depending on the criterion of what is to count as a relevant attribute. This means that what counts as a relevant feature when we look for similarities between different entities, is not context-independent but, rather is determined by the general background knowledge we have about that domain and our particular goal in that situation. (For a critique of the concept of similarity and its role in the concept acquisition see, for example, Quine 1969; Goodman 1972; Keil 1989; Lakoff 1987; Medin & Wattenmaker 1987; Murphy 1993; Murphy & Medin 1985.)

Secondly, a number of experiments seem to have indicated that we are guided by our background knowledge rather than by similarity when categorizing (Rips & Collins 1993). The goal of these experiments was to determine whether the strategy people use in the categorization of objects coincides with their perception of similarity or whether there is a disassociation between categorization and similarity. In a nutshell, in these experiments subjects were asked to judge whether an ambiguous object is more likely to belong to one or the other category and how similar the object is to members of the two categories. For instance, when the object in question is a bird that has changed drastically due to some environmental conditions (because it lived near nuclear waste) and now looks like an insect, subjects were asked whether it is still a bird or an insect and whether it is more similar to an insect or a bird after transformation. The results show that subjects still categorized the animal as a bird but judged that it is more similar to an insect. These experiments have been used to support the thesis that we do not categorize objects merely by using the principle of similarity, but rely on our knowledge of the nature of things (i.e. their invisible but causally relevant properties).

Murphy and Allopena (1994) did several studies that aimed to reveal the major strategies adults use when learning new concepts. They started with the premise that most of the categories that we use on an everyday basis (such as categories of natural kinds, human artefacts, and the like) possess features that are causally important but not necessarily perceptually based. These studies have shown that when aware of such causal interrelations, adults tend to learn new categories in a more efficient way and do not rely solely on the visible features of the exemplars. Moreover, it has been shown that very young children make the distinction between causally central and causally peripheral properties of animals and machines when learning a new type of animal or machine (Keil et. al. 1998). This indicates that even very young children do not rely solely on perceptual features in category formation.

If perception of similarity is not sufficient for early categorization and has to be supplemented by context dependent knowledge of different domains, the question is how the infant gets equipped with this knowledge. It has been argued that infants are hardwired to be sensitive to various stimuli specific to different domains. This means that they have an innate ability to, for instance, perceive causal relations (Leslie 1995), discriminate between biological vs. non-biological motion (e.g. Fox and McDaniel 1982), identify intentional actions of agents and different means that they use to achieve their goals (Gergerly and Cisbra 2003), represent numbers (Xu and Spelke 2000, Wood and Spelke 2005, Brannon, Abbot and Lutz
Ljiljana Radenović

2004) and the like. These abilities are thought to be present at birth and necessary if the child is to learn to categorize things and acquire concepts. So, for instance, the fact that infants are able to discriminate between biological and nonbiological motion in the first year of life allows them to make non-perceptually based distinctions between animals and artefacts as soon as they start learning these concepts. In other words, such tacit understanding plays a role in the formation of first concepts in such a way that the child knows right from the start that the cat and the spoon, for example, are not only perceptually different but also that the former has the ability to move on its own while the latter cannot.

There is a way to answer developmental questions without endorsing strong nativism (see e.g. Radenovic, 2009) but that is a topic for a different paper. However, what is important to notice is that the similarity based theories seem to fall short as accounts of concept acquisition and category formation for the reasons that the proponents of the theory view have elaborated, namely because there is no inherent similarity between things and between events in the world; their similarity is rather determined by context and our specific goals in a particular situation. Thus, perception of similarity cannot be the starting point in the process of concept acquisition and category formation.

This has important implications for the distinction between our descriptions and explanations: namely, it seems that even in developmental terms it is unlikely to find purely descriptive concepts that will not carry some explanatory powers with them. But surely, the way we learn concepts as children (and even adults) is not the same as our scientific practice. At least we do not have to assume that it is until we hear some reasons or get evidence for it. So, we can still argue that regardless of the way we learn concepts our scientific practice presupposes the distinction between description and explanation of the phenomena. Thus, describing and explaining are different (albeit related) scientific endeavours. This means that we can still argue (as it has been already argued see e.g. Craver, (2006) that in order to explain phenomenon we need to describe it properly first. Moreover, it seems that there is no better case to support these claims than the case of medicine. After all do we not describe symptoms first and then search for different explanations for why they occur? Furthermore, in the history of medicine there is a long tradition of so-called empiricist medicine whose proponents became known as doctors who insisted that the detailed histories of diseases should be collected. These histories are thought of as descriptions of symptoms not burdened with any theory. Or, so it would seem. Let me now turn to the case of the Empiriks.

There are certainly plenty of writings on diseases, their signs and symptoms as well as available cures that have survived from antiquity and early modern period, but it is hard to depict modern diseases in the descriptions we find there. This is because western medicine rapidly changed in the last century or so. The outcomes of recovery have changed for the better, the way that sick people experience their illness as well as the place where they are treated (hospital vs. home) are different too, but most of all our understanding of the diseases and their causes has improved dramatically. When we go back to the past, the first thing to notice is that the contemporary classification of symptoms and diseases does not apply to
the classical nor early modern medicine. What we consider to be a symptom nowadays was often a real disease back then. In the past, headache and fever were diseases in their own right, not symptoms of some underlying condition. At first sight, then, it may appear that the classification of the diseases in the past was guided exclusively by what we could see in the diseases, namely by their signs and symptoms. Furthermore, there was even a trend among some medical practitioners called Empiriks\(^2\) to insist on pure descriptions of the diseases and their histories without further investigation of their causes. Many of them believed what John Locke nicely expressed in his *Anatomia*: “Now it is certain and beyond controversy that nature performs all her operations in the body by parts so minute and insensible that I think no body will ever hope or pretend, even by the assistance of glasses or any other invention to come to a sight of them (...)”(J. Locke, *Anatomia*, PRO, 30/24/47/2, f. 31r. as cited in C. Crignon, C. Zelle, N. Alloca, 2013, p. 331 [3]). But, was their classification of the diseases really perceptually based and independent from medical theory?

A brief look at the history of nosology\(^3\) can help us see why the answer to this question must be negative. In the classical tradition Hippocrates proposed a particular humoral understanding of diseases according to which we get sick when a balance of four humors is disturbed (humoralism). This can happen due to environmental factors and/or our own predispositions. The job of a doctor is to decipher what is specific for each and every sick individual and to prescribe a remedy accordingly. This is the reason why Hippocrates insisted on collecting detailed histories of the disease for every patient. The disease was a disbalance of individual bodies so the cure had to be custom made. However, this is not to say that they were not interested in classification of the diseases. They made generalizations based on what they observed in many patients, on many occasions. So, they did classify diseases into acute and chronic, endemic and epidemic, as well as those typical for women. Many of the disease names that they came up with are still present today (e.g. dropsy, gout). This humoral tradition continued through the middle ages only to be seriously challenged during the Renaissance. Paracelsus followed by van Helmont offered novel theory of the disease according to which the causes of different diseases are to be found in the minerals and atmosphere that can inflict and poison the body. Paracelsians failed to develop a new classification for diseases but certainly attracted many followers who advocated their doctrines as the most serious alternative to the traditional Galenic medicine.

It is interesting to note that the doctor who did considerable work in nosology was the ‘English Hippocrates’, Thomas Sydenham\(^4\). He accepted the framework of humoralism but along with ancient Hippocrates and the school of Empiriks insisted on collecting empirical data. Empirical medical school or the school of the Empiriks along with the dogmatic or method schools was the medical school in the late Hellenistic period. Unlike their counterparts, doctors from this school believed that medical practitioners should not look for the causes of illness but should focus on treatment based on our experience. In the 17\(^{th}\) century Empiriks were criticized for being charlatans but they were often the most forceful critics of the academic (mostly Galenian) medicine. The need for a systematization of empirically based medicine was on the rise.

---

\(^\text{2}\) Empirical medical school or the school of the Empiriks along with the dogmatic or method schools was the medical school in the late Hellenistic period. Unlike their counterparts, doctors from this school believed that medical practitioners should not look for the causes of illness but should focus on treatment based on our experience. In the 17\(^{th}\) century Empiriks were criticized for being charlatans but they were often the most forceful critics of the academic (mostly Galenian) medicine. The need for a systematization of empirically based medicine was on the rise.

\(^\text{3}\) For more details see a review paper *Nosology* by W.F. Bynum, (1993).

\(^\text{4}\) For more on Thomas Sydenham see very informative paper “Thomas Sydenham: epidemics, experiment and the ‘Good Old Cause” by A. Cunningham (1989).
detailed histories of diseases gathered from the extended clinical practice. His focus was not on the discoveries of internal workings of the body but on finding the cure for the patient. This can be done, he believed, only by numerous observations and by many trials done in the spirit of Baconian methodology. He did further develop the nosology of his day as well as the understanding of the diseases. Since he had the opportunity to work with a large number of people he was in a position to perceive patterns in the manifestation of contagious disease. This led him to conclude that nature works in uniform ways according to certain laws. Now, according to Sydenham we cannot hope to discover such laws but can try to correlate diseases and their remedies. His major breakthrough was in the field of fevers. He was basically the first one to realize that the fever might not be the disease in its own right but the way our bodies fight the disease. Again he was able to reach such a conclusion by having the opportunity to observe many patients with fevers.

Now, does this mean that Sydenham came to these conclusions by noticing perceptual similarities among different instances of one and the same disease without relying on the background theory? This is hardly the case, as his background theory and his classification system for disease were Galenian. His extensive empirical work and observations helped him modify background theory and improve it. It certainly resulted in deeper understanding of particular diseases. But this is not to say that his practice was done in a theoretical vacuum in which he was able to see the perceptual similarities of diseases. That such a vacuum was not his reality is clear when we take a look at his classification of disease. He, along with his predecessors, did classify diseases into acute and chronic. Even though there were some cases when the acute disease turned into the chronic one, Sydenham thought that their causes were radically different. While the causes of the acute ones are coming from the outside and usually lead to epidemics, chronic diseases have internal causes. Sydenham certainly did not have high hopes that we were going to identify such causes (external or internal) but he thought that we could try to identify some remedies. However, the most important point to notice here is that Sydenham, like those before him (no matter how skeptical about our knowledge of the causes he was), based his classification of the diseases on what he thought the causes of the diseases were: environmental or internal to the body. This means that mere descriptions were never the basis of it.

Now, if the doctors shared some theoretical conception (i.e. causal understanding) of the disease what about the literate public? Maybe their conception of a disease was mostly descriptive, grounded in the similarities of signs and symptoms? Upon closer analysis this also appears not to be the case. Let’s take a quick look at the 17th century. Various writings from that period including the books on remedies, personal letters and the like suggest that doctors and the laypersons of the 17th century had a shared general view of the nature of diseases (for a comprehensive review see A. Wear, 2000). That is, they had the same ‘theory’ of disease differing only in details when it comes to the internal workings of the body. Indeed, doctors were equipped with more details, but laypersons had some idea how to diagnose themselves and some idea about what was going on inside their bodies
too. The authors of the books of remedies took the self-diagnostic skill of the reader for granted. Even though there was less interest in the books that would broaden layperson’s knowledge of the inner workings of a disease, such books have been written since the Middle Ages (Wear, 2000). They profoundly influenced the educated public as it is nicely captured in the letters of the Reverend Thomas Brockbank that he wrote to his fiancé. In one of the letters he says:

`In mine [last letter] I told you I had not been very well, and I dare not say I am perfectly recovered I am tormented frequently with a corroding pain at my breast, and spit more than usually and what this may be the forerunner of I know not but fear the worst.’ [quoted in A. Wear, 2000, p. 150]5

In this paragraph he describes his symptoms but does not name the illness he fears the most, namely consumption (i.e. tuberculosis). He thinks of his lungs as ‘corroding away’ while spitting becomes for him a sign of a deadly disease. The consultation with the doctor did not release him from the worry. In the letters to follow he still describes his symptoms as those that conform to the descriptions of consumption found in medical books (corroding, ulcerating chest pain), but he admits that he feels better. He says:

Sephton is pleasant enough in Summer, but exceeding wet and dirty in Winter, the Air thick and moist, and as such not very agreeable to my constitution. Among other things the Doctor has advised me to take Tobacco to carry off ill humours and I am begun very moderately to follow his directions at bedtime. Perhaps it may do me good, and I am considering ‘tis better to have breath stinking of Tobacco than no breath at all. [quoted in A. Wear, 2000, p. 151]

It’s important to note that he invokes humoral processes when talking about his illness which indicates that humoral processes were part of a common knowledge of literate people.

So far it seems that the results of developmental psychology as well as different cases from the history of medicine point to the same conclusion, namely that there is no clear-cut distinction between description and explanation of the diseases. This, of course, is not that surprising. In the philosophy of science a similar distinction, the one between observational and theoretical sentences have been criticized at many occasions (see e.g. Kuhn 1962, Feyerabend 1975, Quine 1969 to name just a few). Now, after we have come to the conclusion that there is no sharp distinction between descriptions and explanations it is time to ask what kind of implications this has for Lemoine’s analysis of the pre-naturalized and naturalized concepts. For one, the distinction between pre-naturalized and naturalized concepts that he intended to ground on such distinction loses its footing. This does not mean that there is no difference between pre-naturalized and naturalized concepts. How-

ever, we should not see such difference as a difference between description and explanation. That is, the very process of naturalization a concept cannot be rendered by the switch from the description to the explanatory function. Instead, in the naturalization process, a pre-naturalized concept becomes a part of a much more refined explanatory network and is brought up to date with the contemporary scientific knowledge (whether this knowledge is the knowledge of physics, biology, chemistry or any other science that the concept belongs to). In this way a pre-naturalized concept gets naturalized.

The next question is where does this leave philosophy of medicine and philosophical understanding of the disease. That is, if we are to abandon the concept of naturalization that Lemoine offers should we also abandon his advice to consult medical explanations of diseases when doing philosophy of medicine? I am turning to these issues now.

3. Conclusion: The nature of conceptual analysis and the future of philosophy of medicine

As we have seen in the previous sections there is no sharp distinction (psychological nor historical) between pure descriptions and causal explanations. Lemoine developed the aforementioned distinction to expose weaknesses in the current debate between naturalists and normativists. By relying on the difference between explanations and descriptions he argued that all philosophers so far have utilized pre-naturalized (i.e. descriptive) concepts when defining disease while they should move on and include real naturalized (i.e. explanatory) concepts in their definitions. This can be done only if philosophers take real medical explanations of the diseases seriously and with care. For Lemoine this is the only way to overcome the weaknesses of contemporary naturalists/normativists debates. But, now that we see that there are no such distinctions between pre-naturalized and naturalized concepts should we simply accept that philosophers can continue doing their conceptual analysis the way they are used to?

Not necessarily. I believe that we need to accept Lemoine’s advice and that the only way to make progress in our understanding of the disease is to start paying close attention to the contemporary medical theories of the diseases. But, I think that we can reach Lemoine’s conclusion via a somewhat different route without relying on the description/explanation distinction. So, if the main culprit for the dead-end debate between naturalists and normativists does not lie in the descriptions (i.e. pre-naturalized concepts) that all philosophers use in their definitions of the diseases what is it then? Let me outline one possible answer.

When it comes to the philosophical definitions of disease (the ones that I briefly summarized at the beginning of the paper) the question to ask is what kind of methodology philosophers utilize in providing these definitions. It is not hard to see nor is it a secret that they use conceptual analysis for this purpose. As we have noted at the beginning, some naturalists believe that they are after a definition of disease that captures only the meaning of disease used among medical scientists. Other naturalists think that the concept of disease is common to all of us: medical professionals and laypersons. The former do conceptual analysis of the medical usages of the concept while the latter analyze our everyday use.
Now, it is fair to ask what exactly the nature of such conceptual analysis is. Is it based on empirical or historical research? It seems not. That is, even though philosophers from both camps do engage in conceptual analysis of the concept of disease they do not tell us what kind of method they use in order to collect the views on disease either of doctors or laypersons or both. We are not given tables, statistical data, or references. Thus, even though philosophers claim that this is really how medical practitioners or laypersons understand disease there is no need to trust them unless they give us some evidence.

So, we can ask again, what is the method that philosophers use when defining disease? Obviously, it is nothing else than the old-fashioned, arm-chair conceptual analysis. But, such analysis, when not based on historical research or empirical data, is rather their own abstraction, done in a vacuum, and as such cannot be of great help in our attempt to understand the nature of disease and health. Thus, along with Lemoine, we can conclude that if we are to go beyond such empty conceptual analysis we do need to go further and look into doctors’ conception of various diseases that necessarily involve causal explanations as well. Only then we can see if there is anything unique to different diseases and whether we can ascribe some general disvalue to all of them. This is the only way to make progress in philosophy of medicine.

Ljiljana Radenović
Univerzitet u Beogradu, Filozofski fakultet

References:


Definisanje bolesti:
Opis i objašnjenje u naturalizaciji pojma bolesti
(Apstrakt)


Ključne reči: bolest, pojmovi koji nisu naturalizovani, naturalizovani pojmovi, opis, objašnjenje.