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NATURE, NATURAL VS. ARTEFACTUAL KINDS,  
NORMALITY VS. ABNORMALITY, FUNCTIONS VS. DYS/MALFUNCTIONS,  
AND VALUES VS. DISVALUES:  
SOME GENERAL CLARIFICATIONS RELATED TO HEALTH AND DISEASE

**Abstract**

*What is health? What is disease? In the contemporary literature on health and disease, the notions of health and disease are indirectly if not directly related to other more general cognates like “(un/counter)nature”, “natural vs. artefactual kind”, “(ab)normality”, “(dys/mal)function” or “(dis)value”, without that the relationship between health, disease and these very general notions is clearly further analyzed.*

*My aim, in this paper, is precisely to explore the general relationship between health, disease and the different terms, which any analysis of the terms “health” and “disease” (in)directly refer to. On the basis of the two (main) intuitions that we have about what health and disease are, I proceed through a conceptual clarification of pairs of opposites i.e., from the most general to the most specific ones, the concept of nature vs. what is un/counternatural, of a natural vs. artefactual kind, of normality vs. abnormality, of functions vs. dys/malfunctions, and of values vs. disvalues. We hope to show, in this paper, that an analysis of (the concept of) health and disease shall benefit from being clear, first of all, about the different general concepts, which it is (in)directly related to. If our analysis of those concepts is correct, then health and disease are both two specific natural kinds, and their opposition can be best captured through the dichotomy (biological) functions of something good vs. (biological) malfunctions, or a certain value vs. a certain disvalue.*

1. Introduction

In the contemporary literature about the nature of health and disease, we distinguish between three groups of theories of health and disease, which may be labeled “axiologism about health/disease”, “(mal)functionalism about health/disease” and “hybridism about health/disease” (cf. Ereshefsky 2009; Pellet 2018). These three groups of theories of health and disease are distinguished with respect to the emphasis put on one or both of the two (main) intuitions that we have about what health and disease are: (1) saying that e.g. cell growth is healthy or diseased is making a specific positive or negative *value judgement* toward cell growth, where the value at issue is intuitively a certain *vital* (like life) or *lethal* one (like death); (2) saying that cell growth is healthy or diseased is

saying that cell growth is *functioning* biologically *normally* or *correctly*, or is biologically *malfunctioning*.

While axiologism about health/disease seriously accounts for intuition (1) and explains away intuition (2) (cf. Cooper 2002; Nordenfelt 1995; 2000), and (mal)functionalism about health/disease does the opposite (Boorse 1977; Chin-Yee & Upshur 2017; Griffiths & Matthewson 2016), hybridism about health/disease comes with the *prima facie* advantage of seriously taking into consideration both intuitions (1) and (2) (cf. Matthewson & Griffiths 2017; Megone 2007; Wakefield 1992).

Beyond the different theories of health and disease trying to further analyze intuition (1) and/or intuition (2), this quick overview of the debate about health and disease already involves a lot of very different – controversial –, and more general concepts: e.g. one might wonder, first, which *mode of being* health and disease have; intuition (2) seems to point toward health and disease as being *natural* phenomena, while this *prima facie* seems rather not the case for intuition (1) (but, cf. Section 3). However, the question remains: “In what sense(s) exactly health and disease can be considered natural phenomena (or not)?”.

Second, one might wonder how we are to understand the idea – underlying somehow intuition (2) – that health is related to normality and disease to *abnormality*.

Finally, on basis of intuitions (1) and (2), we may ask in which sense(s) health and disease are related, more generally, to functions, malfunctions (dysfunctions too), and (dis)values.

We expect that a more thorough investigation into the different pairs of opposites (indirectly) related to health and disease sheds new light on the nature of, or shall make avoid many pitfalls in future more precise analyzes of, health and disease.

Our conclusion is that the concepts of health and disease are both two natural kinds, if we assume a certain theory of natural (vs. artefactual) kinds; but the opposition between health and disease can be best captured through the distinction between (biological) functions of something good and (biological) malfunctions, or between a certain value and a certain disvalue.

This paper is organized as follows: in Section 2, I investigate the different possible senses of nature and what is un/counternatural, and tell under which sense(s) health and disease are the most intuitively related to, while, in Section 3 to 6, I do the same for other more specific cognates like, respectively, “natural vs. artefactual kind”, “(ab)normality”, “(dys/mal)function” and “(dis)value”.

## 2. Health, Disease, and (Un/Counter)Nature

The notion of nature is highly ambiguous; indeed, “nature” (or “naturalness”) seems to refer to (at least) six different entities: to, when used *widely*, (i) mere reality like in the context of artefactual kinds/entities as being still in the natural world; to, when used *narrowly*, a certain portion of reality viz. (ii) a natural entity by contradistinction with an *artefactual* one (for more on this, cf. Section 3); or (iii) a good entity vs. a *bad* one like in the context where a certain disease like lung cancer is said counter-natural or unnatural

(Boorse 1977; King 1945); or (iv) a natural entity vs. a *normative* entity; or (v) a natural entity vs. a higher-level entity studied by the *Geisteswissenschaften* (e.g. in discussions, in moral and political philosophy, around the human state of nature, or even perhaps in the debate around nature vs. nurture); or (vi) the intension/essence/nature of  $x$  vs. the denaturation of  $x$ <sup>1</sup>.

In this landscape, where to intuitively situate health and disease? If we decide to, first, couple – rather than, here, oppose – health and disease, then health and disease seem to be both *natural* phenomena in the widest sense possible (cf. sense (i)), but we can also consider them as being *unnatural* in the sense of being both normative with respect to sense (iv) (cf. intuition (1) above about health and disease) and in the sense of being entities studied by the *Geisteswissenschaften* (cf. sense (v)), for, albeit *specific* healthy and diseased processes are studied by the *Naturwissenschaften*, this seems not the case for the *general* notions of health and disease.

Are “health” and “disease” both natural phenomena in the sense (ii) above viz. vs. artefactual phenomena? We leave this question here pending (but, cf. Section 3 for a positive answer).

Second, if we decide now to oppose health and disease, then health seems to be natural in the sense (iii) above, while disease seems un/counternatural.

What about sense (vi)? This dichotomy could roughly correspond to a certain theory of disease (Pellet 2018), according to which for some *positive*  $x$  to be diseased is for  $x$  to lose its essence. If true, then, indeed, health may count as natural with respect to sense (vi), while disease would be unnatural here – but, that much goes with interpreting  $x$  as *positive* only here.

### 3. Health, Disease, and Natural vs. Artefactual Kinds

What is a natural kind? What is an artefactual kind? Are health and disease natural or artefactual kinds? I can only provide here the beginning of an answer about what a natural vs. artefactual kind (or even an entity, more generally) is (Bird & Tobin 2017; Krohs & Kroes 2009).

How to account for the distinction between a natural kind (or entity) comprising both specific uncontroversial cases (e.g. water, tiger, etc.) and (more) controversial ones (e.g. beauty, truth, pain, gender, etc.) and an artefactual one (or a *creature*, narrowly taken) comprising both specific uncontroversial cases (e.g. a Turing machine, a car, any *engineered* object (in (post-)AI), etc.) and (more) controversial ones (e.g. University, money, Newton’s cradle, a perpetual motion machine (at least, in a *metaphysically* possible world, if not in a *physically* possible world, because of, as widely acknowledged, the violation of the first and second laws of thermodynamics)?

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<sup>1</sup> We may fear that senses (iv) and (v) collapse, actually, into one and the same sense. However, it is not excluded that the *Naturwissenschaften* study also *normative* entities: e.g. lung cancer is studied by the *Naturwissenschaften*, but, as being a certain disease (which is a value) (cf. intuition (1) above), it still contains a normative element.

The distinction between a natural and an artefactual kind/entity is usually, basically, drawn through the venerable distinction (at a more general level) between, respectively, a *mind-independent* (or *objective*) and a *mind-dependent* (or *subjective*) kind/entity (against natural kinds as mind-independent, Ereshefsky 2018).

How are we to understand mind-(in)dependence? It is common to hold that a mind-dependent kind/entity is a product of an intentional (e.g. human) action (i.e. an invention, creation, device, fabrication, construction, or even coinage (here for artefactual kind/entity *terms*)), while it is not the case for a mind-independent kind/entity (cf. e.g. Burge 2010; Hansson Wahlberg 2014; Searle 1995; von Wright 1963; on other plausible understandings of objectivity, Jukola 2017).

More specifically in the context of kinds (and types), we can argue that an artefactual *type* is a type whose *any* token is *necessarily* brought into existence *only* by a specific (e.g. human) subject through e.g. its perception, desires, preferences, intentions, etc.: e.g. a token disease (re)created in a lab, or a token living being created (as a whole) as a (token) *clone* (vs. e.g. the creation of a token *robot*) is as much natural as a token disease or living being not created by a certain intentional action.

Indeed, had a subject not created the token in question, the type would still, nevertheless, (go on to) exist – to the contrary of an *artefactual* type.

If we agree that natural and artefactual kinds are both, or *exist* both as, *specific* (real) kinds, or are out there in the world, the reality or the *nature* (widely taken), then a *natural* kind may be more strictly *defined* as a mind-independent genus (i.e. a genus not produced by a subject's (e.g. human) action) plus a mind-independent differentia, by opposition with an artefactual kind, albeit definitions of natural and artefactual kinds may be said both two different specific definitions viz., respectively, one given (or found) independently from humans (or other (biological) species), the other given/found dependently from humans (or other (biological) species).

There is, of course, more to say about the difference between natural entities and artifacts than merely differentiating them thanks to the distinction between, respectively, mind-independence and mind-dependence (cf. Preston 2018); however, for the present purpose, we can stay content with the above minimal account.

This way of analyzing mind-dependence or, more specifically here, a mind-dependent *kind* does not impinge on the fact that a mind-dependent (or subjective) kind is no less *genuine* (or *irreducible*) than a mind-independent kind; a mind-dependent kind is still arguably a (*real*) kind; it truly exists *as* a (specific) kind viz. a mind-dependent one (Ingthorsson 2013; Khalidi 2016; *pace* Kendig 2016)<sup>2</sup>.

By following roughly the same line (though not along token reductionism), the acknowledgment of artefactual kinds as *sui generis* kinds to be strictly distinguished from brute ones does not imply that artefactual kinds cannot be said (*indirectly*) constituted by brute kinds – or vice versa.

It is paramount not to equate, as it is unfortunately ubiquitously done (cf. Vinuesa 2002), *subjectivity* (or mind-dependence) with *anti-realism*, for one may want to defend the plausible view that artefactual kinds like paintings or even fictional kinds are *real*

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<sup>2</sup> Nevertheless, it is to be noted that Searle is well-known for defending a *reductive* account of artefactual *tokens* to so-called *brute* (or mind-independent) tokens (cf. Searle 1995).

(or existent), although *mind-dependent*, i.e. that their existence (or, more precisely, essence) depends on (human) attitudes, or artefactual kinds have no independent existence from humans or other (biological) species (by contradistinction with natural kinds).

While the dichotomy *objectivity* vs. *subjectivity* has arguably to do with the dichotomy *mind-independence* vs. *-dependence*, the dichotomy *realism* vs. *anti-realism* has arguably to do, by contrast, with the dichotomy (mind-(in)dependent) *existence* (*reality* – which maximally contains both the *actual* world/universe and *possible* ones –, or the presence of an essence) vs. *non-existence* or *unreality*.

Thus, the general debate around scientific *realism* vs. *antirealism* is to be perhaps better put along the line of, more properly speaking, scientific *objectivism* vs. *subjectivism* (or anti-objectivism) – albeit, to situate oneself within a certain well-established historical debate, talk about scientific realism can be still plausibly maintained, of course, and a certain scientific antirealist may very well want to be truly antirealist *in lieu of* antiobjectivist (on the vagueness behind the label “scientific (anti)realism”, cf. Chakravartty 2017).

However, three general objections can be raised against the above account of a natural and artefactual kind: (i) several philosophers (Hansson Wahlberg 2014; Hilpinen 2011; Smith, 2003 Thomasson 2007) hold that some *artefactual* kinds/types (e.g. a cup, a sheet of A4 paper, a perpetual motion machine, Newton’s cradle, etc.) are such that they would still exist, if human beings (or other species) were all to disappear.

Nevertheless, to directly address objection (i), we can maintain (here with Searle 1995) that, had we (or other (biological) species) not created such kinds/types, then, anyway, they would not (have) exist(ed).

Moreover, we can argue, against orthodoxy (cf. Marcus 2009), that a *state* is an *enduring* thing in the *minimal* sense that it exists *at time t*, for *instantaneous* states (or *instants*) are still arguably states themselves (for the same point, cf. Fine 2006; Stout 2016; on the problem of so-called *instantaneous velocity*, cf. Harrington mss.): e.g. a cup (as a specific artefactual *state*) can, minimally, *instantaneously* exist at time *t*, when we (or other (biological) species) create it; it does not have to *continuously* or even *pro tem* (temporarily, momentarily or provisionally) *persist* (across time or over a stretch of time) by *enduring* (or, to be *long-lasting* by enduring) (even when human beings (or other (biological) species) do not exist anymore) (on the puzzles of identity over time or persistence, cf. Gallois 2016 as an entry).

As a second objection, we could argue that (ii) an artefactual kind/type just is a kind/type whose *origin* is to be found *only* in (human) attitudes, etc., so as to exclude the case where e.g. a token tree which was grown in one’s garden (i.e. whose seed has been planted in one’s garden) would *not* be as much natural as a token tree which grew up in a forest, or an IVF-procreated baby with respect to a non-IVF-procreated baby.

However, against objection (ii), it is completely irrelevant that e.g. a human being be at the origin of an entity for this entity to be called “artefactual”.

Indeed, even if a human being is at the origin of a token, whose type would not exist without this human hand, the type in question is still intuitively natural, and not

artefactual; it is counter-intuitive that such types can be claimed mind-dependent: e.g. a token disease not found anywhere else except in a lab, which is at the origin of its existence, is perfectly natural (in the specific narrow sense we are interested here, of course); a gene-edited baby, whose genome was edited by a human hand is as much natural as a non-gene-edited baby; GMOs are also non-artefactual; or a bionic human being (e.g. with a dental prosthesis made of synthetic ceramics), however not completely healthy he can be, is as much natural (vs. artefactual here) as a non-bionic human being.

Note that our reply to objection (ii) is in line with an *anti-reductionism*, where, for  $x$  to be artefactual,  $x$ 's (direct) constituents must depend on e.g. human attitudes/actions – and not *indirect* ones.

As a last objection, we can argue that (iii) modifying a natural kind such that the kind would not be found in nature without this modification just is what makes a kind artefactual: e.g. Pegasus as a *winged* white horse.

However, relatedly to our reply to objection (ii), if Pegasus is an artefactual kind, that is because, as a *whole*, it is a mind-dependent entity. On pain of a category mistake, the essence (strictly speaking) of a natural/artefactual kind must be entirely natural/artefactual.

Are healthy and diseased processes natural or artefactual kinds, thus? Along our theory of natural or, more specifically artefactual, kinds, it seems obvious that health and disease are both natural kinds: e.g. were all human beings (or some other (biological) species) to disappear (or, could we or other species not (re-)create tokens of the type in question any longer), sunsets would still *be* (intuitively) *beautiful*, a wood thrush's song would still *be melodious*, bees (or ants) would still *be eusocial* (Clavien & Chapuisat 2012; Wilson 1975), or dogs could still *be healthy* and/or *diseased*, or there were also healthy and diseased processes before the advent of any intentional agent. In that sense, a certain healthy or diseased process is *mutatis mutandis* perfectly *natural* (against normal functions as natural or objective, cf. Amundson 2000).

Does this mean that e.g. artworks or monuments (as specific *artefactual* entities) cannot *be* e.g. beautiful, or a robot cannot be healthy/diseased (on pain of a category mistake)? A way out here (though not a panacea) is to argue that they, rather, somehow (indirectly) *represent* (imitate, or are inspired by) something naturally beautiful or healthy/diseased. This point should be obviously taken into account in a more complete theory of artifacts (on that, cf. Petroski 1992).

#### 4. Health, Disease, and (Ab)Normality

If we are now clear in what sense(s) we can talk about health and disease in terms of their being natural or not (cf. Sections 2-3), following our two (main) intuitions about health and disease (cf. Section 1), we may wonder how health and disease are related to (ab)normality (or (un)ordinariness).

To do so, we have to ask ourselves: what is (ab)normality? At a very general level, “*normality*” is related to other cognates like “correctness” (or “ideality” or

“ordinariness”): e.g. the sentence “it is *normal* for a human being to be a rational animal” is equivalent to the sentence “it is *correct* for a human being to be a rational animal”.

To the contrary, “abnormality” would be related, thus, to other notions like “incorrectness”: e.g. “it is *abnormal* for a human being to be irrational” is equivalent, along this line, to “it is *incorrect* for a human being to be irrational”.

Following this very general characterization of (ab)normality, how are health and disease related to normality and abnormality? If a healthy human being is obviously a normal one, then we would like to argue that a diseased human being is precisely an abnormal one.

However, if normality (or correctness) is strictly distinguished from values (cf. Section 6), it seems also true that a *diseased* human being – as a *negative entity* – still has correctness conditions (like for positive entities): e.g. it is normal *for* a psychopath to lack empathy; it is normal *for* cancer that it leads to an uncontrolled cell proliferation; etc. In that sense, a psychopath who does not lack empathy is an *abnormal* one (i.e. that he is a *normal* human being), or cancer which does not lead to an uncontrolled cellular proliferation is also abnormal (i.e. that it is a *normal* cell cycle). It is to be noted, nevertheless, that the law of double negation (used in those circumstances) is *not* an identity relationship between  $\neg\neg p$  and  $p$ , but an equivalency one.

Thus, the dichotomy normality vs. abnormality does not correspond to the dichotomy health vs. disease.

### 5. Health, Disease, and (Dys/Mal)Functions

The opposition normality vs. abnormality is directly linked to another famous opposition – which health and disease are also the most often related to – viz. the opposition between functions and dys/malfunctions.

Indeed, following more strictly intuition (2) about health and disease, if health and disease cannot be couched in terms of normality vs. abnormality, because it is not a sufficiently fine-grained opposition (cf. Section 4), the prospects for relating in a more precise way the dichotomy health vs. disease to the opposition between functions and dys/malfunctions are *prima facie* more promising.

First of all, the dichotomy functions vs. *dys*functions can be phrased in terms of *normal* functioning vs. *abnormal* functioning: e.g. cell cycle is healthy, when it functions correctly or normally i.e. when cells correctly divide (or reproduce) and are grouped together, but cell cycle is diseased, when it functions incorrectly or is *dys*functional i.e. when cells do not correctly divide (or reproduce) and are grouped together (e.g. when cell cycle *hyper*-functions by having an uncontrolled cellular proliferation).

However, as for the dichotomy normality vs. abnormality, it is intuitive that (whatever theory of (biological) (dys/mal)functions one has in mind here) e.g. cancer also has (or bears) a function (*pace* Neander 1991), and exerts it when it leads to an uncontrolled cell proliferation.

Thus, if the dichotomy functions vs. dysfunctions follows more precisely intuition (2) about health and disease, by relying, nevertheless, on the dichotomy normality vs. abnormality, it also inherits the same problem as the one of the dichotomy normality vs. abnormality viz. that a disease can still be deemed normal (to its bearer) (cf. Section 4).

But, what about the opposition between functions and *malfunctions*? We can expect that the word “malfunction” – by contradistinction with “dysfunction” – truly captures, indeed, the notion of a (biological) function related to disease taken as something *bad*, while health would be associated not to (biological) functions *simpliciter*, but only the ones whose bearer is *good*: e.g. a psychopath can be said to *function correctly* (i.e. by having a lack of empathy) as a psychopath; or, it can be said to be *dysfunctional* with respect to its correct functioning (i.e. a lack of empathy); or, it is said to be *malfunctioning* with respect to (human) empathy – which is judged to be something (biologically) good.

Thus, the opposition health vs. disease does not just correspond to the dichotomy functions vs. dys/malfunctions. Health seems a *specific* biological function viz. the correct functioning of something (biologically) *good*, while disease seems also a *specific* biological function viz. a *specific* biological *dys*function or the incorrect functioning of something (biologically) *good* i.e. a biological *malfunction*.

In other words, a (biological) malfunction is still a specific (biological) function – though the bearer is negative. In that sense, we do not associate so tightly, unlike Aristotle’s famous function argument, talk about functions (*simpliciter*) with *goodness* – but with *correctness* only (cf. Section 4).

Giving a full-fledged analysis of (biological) (dys/mal)functions is, of course, far beyond the scope of the present paper. However, we can offer the following guidelines: if we are right in associating the notion of (dys)function with the one of (ab)normality, and if (ab)normality is truly related to (in)*correctness* conditions (cf. Section 4), then (dys)functions just are those conditions specifying what it is for something to be (in)correct or (ab)normal: e.g. a *normal* heart would be a heart which, amidst others, pumps blood, and pumping blood is a function of the heart; a normal psychopath would be a psychopath who (amongst others) lacks empathy, and lacking empathy is a(/the) function of a psychopath; or, to the contrary, an *abnormal* heart would be a heart which, among others, does not pump blood, and not pumping blood is a *dys*function of the heart; an abnormal psychopath would be a psychopath who (amidst others) does not lack empathy, and not lacking empathy is a(/the) *dys*function of a psychopath.

Furthermore, if we are right that health and disease are related, respectively, to *good* and *bad* biological functions (cf. Section 6), then e.g. a heart (assumed to be something good) may be said healthy, but not a psychopath.

Fig. 1 summarizes all this as follows:



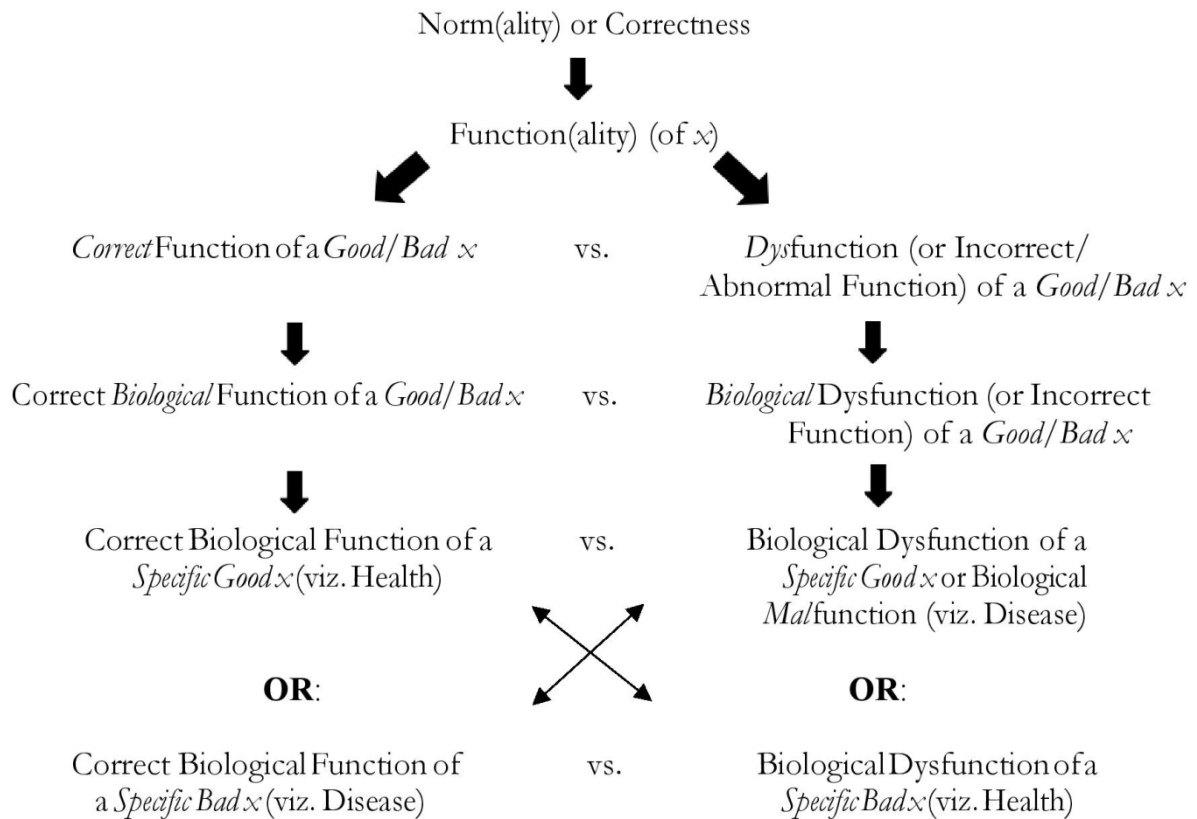


Fig. 1 – The relationships between (ab)normality and (biological) (dys/mal)functions. The one-way arrows indicate a relationship of specificity, while the double arrows indicate a relationship of logical equivalence.

## 6. Health, Disease, and (Dis)Values

If, with the dichotomy (biological) functions of something good vs. (biological) *mal*functions, we seem to capture in a more specific way the opposition between health and disease (cf. Section 5), we may still wonder whether there are no other possibilities by eventually asking: what is the relationship between health, disease and *(dis)values*?

It goes without saying that health and disease respectively correspond, indeed, to something *good* (i.e. a positive value) and *bad* (i.e. a negative value or a disvalue). More precisely, following intuition (1) about health and disease, health and disease are intuitively a certain *vital* value (like life) and a *lethal* one (like death), respectively.

But, what is a vital value? What is a lethal value? Even if we cannot provide here a thorough analysis of those values, we can, nevertheless, thanks to the conceptual clarification work done in the previous Sections 2 to 5, give some guidelines: if *healthy* cells in the lung's tissue just are those cells, whose (biological) functions are present, and if those (biological) functions are the conditions making cells in the lung's tissue *normal* (cf. Section 5), then we may want to argue that those (biological) functions just make what cells in the lung's tissue *are*.

Following this basic idea, a diseased process would be, thus, a process going against the *nature* of e.g. cells in the lung's tissue (cf. Section 2 for the different senses of

“nature”). However, we still fail to see in what sense cells in the lung’s tissue - rather than e.g. lung cancer itself – are *good*, and not bad. Following our claim that the value of health is grounded in what the value bearer *is*, we can argue that the value bearer in question (e.g. cells in the lung’s tissue) is a *part* of an organism.

In that sense, the value of health (and of disease) can be grounded in different *non-deflationary* theories of organisms (and their parts) (e.g. on organicist theories, cf. Nicholson 2018) – i.e. those following the idea that life or health is somehow prior to death or disease, as suggested above by the idea that disease is *counter-natural* (taken in a certain narrow sense, of course) (cf. Section 2 on the different senses of “nature”).

## 7. Conclusion

Any serious philosophical investigation into the concept of health and disease shall necessarily rely on more general concepts – which can be intuitively expressed along pairs of opposites – like the ones of nature vs. what is un/counternatural, of a natural vs. artefactual kind, of normality vs. abnormality, of functions vs. dys/malfunctions, and of values vs. disvalues. We have seen that the opposition between health and disease does not necessarily correspond to these dichotomies, albeit health and disease are still (indirectly) related to them, of course.

If we are right with our analysis of those concepts, then health and disease are both two specific natural kinds (understood in a certain way) (cf. Section 3), and their opposition can be best captured through the distinction between, respectively, a (biological) function of something good and a (biological) malfunction (cf. Section 5), or between a certain value and a certain disvalue (cf. Section 6).

The implications of all this for future more precise and complete analyzes of the concepts of health and disease are multiple: e.g.,

- first, in light of our own distinction between natural and artefactual kinds (cf. Section 3), a *subjectivist* theory of health and disease seems hard to defend (cf. Nordenfelt 1995; 2000);
- second, the diverse theories of (biological) (dys/mal)functions should take into account our sophisticated distinctions as drawn in Fig. 1, even if those theories do not accept our own sketch of a theory of (biological) (dys/mal)functions in Section 5;
- finally, the different senses of “nature” reviewed in Section 2 as well as the dichotomy normality vs. abnormality (cf. Section 4) point toward a *non-deflationary* theory of health, where health would not be the absence of disease (*pace* Boorse 1977) – which is a theory of health still *partly* followed by the WHO (1946), according to which health is a “[...] state of complete physical, mental and social well-being, and *not merely* the absence of disease or infirmity”(my emphasis).

Albeit a lot of conceptual analysis remains to be done in thoroughly clarifying the concepts of health and disease – which is an urgent and important task, but which is far beyond the reach of a single paper –, our more modest aim in the present paper was only to lay, through an analysis of different general concepts, which health and disease

are (indirectly) related to, the foundations for future (more complete) theories of health and disease.

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