**“A Naturalist Response to Kingma’s Critique of Naturalist Accounts of Disease”**

**Abstract:** Elselijn Kingma maintains that Christopher Boorse and other naturalists in the philosophy of medicine can’t deliver the value-free account of disease that they promise. Even if disease is understood as dysfunction and that can be applied in a value-free manner, values still manifest themselves in the justification for picking one particular operationalization of dysfunction amongst a number of competing options. Disease determinations depend upon comparisons within a reference class about reaching organism goals. Boorse considers the former to be theproperties of sex and age of a species, and the latter to be survival and reproduction. Kingma suggests that naturalists are influenced by value judgments and may rely upon implicit assumptions about disease in their choice of reference class and goals to determine which conditions are diseased. I’ll argue that she is wrong to claim these can’t be defended without arguing in a circular manner or making certain arbitrary or value-driven judgements.

**Keywords:** Naturalism, Disease, Reference Classes, Goals, Kingma, Boorse.

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**I. Introduction**

Philosophers of medicine who identify themselves as naturalists insist that determinations of disease do not depend upon judgements of value or well-being. Diseases may not always be bad and health my not always be welcome. Normativists believe that diseases “must involve some form of disavaluation or call to action” [1, p. 592]. Diseases harm us and lead us to seek medical care.

Christopher Boorse, arguably the best known and most influential philosopher of medicine, describes himself as an “unrepentant naturalist” [2, p. 5). Boorse and his fellow naturalists find it easy to understand why diseases are considered harmful for they define disease along lines of suboptimal contributions to survival and reproduction. Since earlier death will be typically harmful, it is not at all surprising that harm is associated with disease.[[1]](#footnote-1) People go to doctors when they are bothered by a disease, so it is natural to think that diseases are harmful.[[2]](#footnote-2) But disease need not always be harmful and there are asymptomatic diseases that don’t send people to doctors.

Boorse introduces the concept “disease plus” (2, pp. 100-101) to account for the judgements of value that normativists build into the nature of disease. In other words, he takes an *adjectival approach* and recognizes that there are treatable diseases, harmful diseases, asymptomatic diseases, beneficial diseases, and harmless diseases etc. Disease itself will just involve a dysfunction. Since even broken legs, hangings, chokings, poisonings, and overdoses will be dysfunctions, they too are diseases, or to use the term Boorse has come to prefer, pathologies.

Normativists insist that dysfunction is not sufficient for defining pathology, but a normative conception of harm must be built into the definition. However, there are a number of well-known problems with normativism. If pathologies involve society-relative judgments about values or well-being [2], then diseases involve an unwelcome relativity as certain pathologies may be considered attractive in some societies but not others. While a move to higher altitudes with fresher air may bring a cure, surely finding new neighbors with refreshing attitudes does not. Of course, a normativist need not be a moral relativist or social constructivist.[[3]](#footnote-3) However, if a normativist is not a moral realist - and many respectable philosophers working in metaethics hold to such metaethical skeptical views - I suspect that they would likely believe that the values relevant to demarcating disease and health will vary from culture to culture. There is also the well-known problem of societies pathologizing dissent as in the infamous case of Soviet psychiatry. Boorse adds that value-laden or welfare-based accounts of pathology can’t account for how there could be pathologies amongst mindless creatures like plants that could and did exist independently of value ascribing societies [2]. Although I share Boorse’s naturalism, I don’t agree with him that well-being is possessed just by the sentient. I believe plants can literally improve and flourish, or decline and do poorly, as their well-being fluctuates with their health [4-5]. I believe plants truly have interests in sun, water, and nutrient-rich soil. But Boorse’s position is admittedly a very plausible one, and I suspect that there are more noted philosophers on his side than mine.

I contend that the strongest defense of naturalism lies in the metaphysical possibility that the Epicureans are right about death being neither a harm nor a benefit, as well as the rival possibility that death is followed by Heavenly bliss. I consider these possibilities to present a reductio of normative theories as the cause of death would then not be a pathology.[[4]](#footnote-4) If anything is true in medicine, it is that our lives are typically ended by pathological conditions.

Suppose first that universalists in the philosophy of religion are correct - no one goes to Hell [7-9]. That would make all sudden deaths good, all things considered. But even if disease has only to be *prima facie* harmful, some obvious diseases won’t be so classifiable. Imagine if there could be a disease that only struck those already suffering from another worse disease, then it might not be even *prima facie* bad. For instance, they might obtain the second disease after they were in unbearable, untreatable pain due to the first non-lethal disease. They would then die while in terrible pain and thus have nothing further denied them by their deaths. Relief from a worse disease by another disease that dispatches them to Heaven won’t be even a *prima facie* harm.[[5]](#footnote-5) Likewise, there is also an absence of prima facie harm if someone in a permanent, non-lethal coma acquires a fatal disease that ushers in the delights of heaven. Since the permanent coma has already removed the benefits the living can experience, their deaths would not add even a minor prima facie harm that will be offset by Heavenly bliss.

 The second problem posed by death for a harm condition is seen by considering the possibility that Epicureanism is true and death is never a harm nor a benefit. As suggested above, we can imagine that there is not even a prima facie harm in the dying process, which may be nearly instantaneous. The Epicureans claim that death produces nonexistence, while harms and benefits are states that require existing subjects. If one doesn’t exist, then one has no level of well-being which can be compared to the well-being level of the living in order to provide a judgment of death’s harm or benefit. Epicurus explains:

Death, therefore, the most awful of evils, is nothing to us, seeing that, when we are, death is not come, and, when death is come, we are not. It is nothing, then, either to the living or to the dead, for with the living it is not and the dead exist no longer [10].

If death is not a harm, then any disease that brought it about couldn’t be a harm. But surely we wouldn’t cease to call that fatal condition a disease. We would still be inclined to classify such fatal dysfunctions as diseases despite the absence of even *prima facie* harm.

 It thus seems that naturalism has the high ground in the debate. But Elselijn Kingma, whom Boorse considers his most trenchant critic, suggests that value judgments can enter into the determinations of disease in other ways. While there may be no value judgments involved in describing someone as dysfunctional and pathological, the values appear earlier in the justification “for picking one particular operationalization of dysfunction amongst a number of competing options” [1, p. 601]. Pathology determinations depend upon comparisons within reference classes about reaching organism goals. Kingma maintains that value judgments influence the choice of goals and reference classes. I will argue that she is wrong to claim that these can’t be defended without arguing in either a circular manner or making certain arbitrary value-driven judgements. My contention is that there are principled judgments that can be made that aren’t implicitly assuming some reference classes or goals are healthier or more valued.

**II. Reference Classes, Functional Goals, and Values**

Men who can’t get pregnant and neonates who can’t walk are not unhealthy. Such judgments indicate that an appeal to reference classes of age and sex is required to determine who is healthy. But are the reference classes of sex and age chosen on the basis of value judgments? Kingma answers that they are and that there can’t be a value-free or non-circular justification of such reference classes.[[6]](#footnote-6) She claims that naturalists like Boorse need to provide but can’t deliver an empirical or value-free account of why people with pneumonia, blindness, Down’s syndrome, depression, attention deficit hyperactivity disorder (ADHD), and proclivities to drink heavily are not reference classes [11, p. 127; 1, p. 601]. Kingma points out that Boorse can’t merely state that age and sex are the appropriate classes. Nor can he claim that they are normal variations and the alternatives that she lists such as heavy drinking and depression are diseases for that would be circular, presupposing what are healthy forms [11, p. 129; 12, p. 370). Reference classes are supposed to provide the tools for health determinations, not presuppose them, i.e., those listed can’t be ruled out on the intuitive basis that they’re unhealthy. Kingma stresses that since Boorse is after a value-free conception of health, “the justification for admitting certain reference classes only should be value-free too” [12, p. 370].

Kingma claims that what Boorse must show is “how empirical facts underlie the distinction between appropriate and inappropriate reference classes” [12]. Since Boorse describes a reference class as “a natural class of organisms of uniform functional design” [13, p. 562], she considers the prospects of *nature*, *uniformity*, and *design* as offering value-free justifications for operationalizing dysfunction. She judges all three value-free accounts to be unsuccessful [11, pp. 129-130]. If *nature* is understood in terms of natural kinds then it won’t work as there are diseases that are innate due to genetic structures and would plausibly count as natural kinds. *Uniformity* doesn’t fare any better. There are diseases that have many uniform characteristics that group together those suffering from them. *Design* also needs to be cashed out. If it means to have a trait innately, then it won’t work as Huntington’s disease and Down’s syndrome are written into the genes. Furthermore, sex in some animals is acquired, not innate. If “design” is disambiguated as “selected”, it still can’t serve Boorse’s purposes. Nature designs (selects) people to have traits like sickle cell that are diseases. Kingma concludes that the reference classes which health judgements depend upon are themselves suspect as they are “likely to reflect, prior, and possibly value-laden, assumptions about which groups are normal and healthy – assumptions that are deeply embedded in this account of disorder” [12, p. 370].

Kingma illustrates her position by imagining a rival theory to Boorse’s Biostatistical Theory of Disease (BST) that she labels XST. The XST is similar to the BST, but includes homosexuality as a reference class [11, p. 132; 12, pp. 370-371). The homosexual’s disposition interferes with statistically typical reproduction in the class of all men according to the BST and is therefore a disease.[[7]](#footnote-7) However, homosexual sex is normal in the reference class of homosexuals.[[8]](#footnote-8) Kingma points out that such XST-type accounts can be produced for many if not all “disorders.” She concludes that Boorse’s theory lacks “the resources, let alone a value-free method, to withstand the challenge posed by such accounts” [12, p. 370].

Kingma makes a similar critique of Boorse’s choice of goals of survival and reproduction [12, p. 370].[[9]](#footnote-9) They too are not value neutral. So even if their application is value neutral, values are sneaked in with the choice of goals. Kingma writes “As was the case for reference classes, if Boorse employed different goals in his operationalization such as ‘countering climate change,’ or pursuing hedonism,’ or ‘achieving well-being, eudemonia, wisdom and/or virtue,’ then some of the biological functions of our various traits might look quite different – and so would health and disease” [1, p. 601]. She criticizes his response that he is not valuing survival and reproduction as “those are the goals towards which human organisms, qua biological entities, strive” [2, pp. 25-28]. She replies that this won’t work because the human mind has biological functions and they are not limited to reproduction and survival:

“…humans do not, as organisms, strive towards reproduction and survival *alone…*manyof us spend considerableparts of our lives striving to enjoy ourselves sexually, while taking elaborate precautions to *avoid* reproduction. To take one’s desire for sex to be “biological” or “real” but one’s desire to avoid reproduction (just yet) as not, is either to subscribe to a weird Cartesian dualism …or to exclude the mental from our account of function and health and disease” [1, pp. 601-12].

Instead of an objective account of health, Kingma offers a pluralistic and pragmatic conception of health; consequently, it might be the case that our conception of health will evolve with a change in society’s concerns.

**III. Survival as a Goal**

Let’s turn now to investigate why there doesn’t need to be a value laden or circular justification of survival as goal. The key is to understand that we organisms are *essentially* living beings, entropy resistors, so it makes sense in a way that isn’t arbitrary or value laden that our functioning will be determined by contributions to our survival i.e., maintaining our essence.[[10]](#footnote-10) If Kingma allows appeals to natural kinds, uniformity, and selection to be attempts to show “how empirical facts underlie the distinction between appropriate and inappropriate reference classes”, then arguing from the nature and persistence of organisms should satisfy that description as well.

Organisms are essentially alive, not essentially reproducers or agents or thinkers.[[11]](#footnote-11) It is possible for us to exist without being able to reproduce, think or act. We all started out as mindless organisms. We were mindless when our lives begin. We go out of existence at death, not when we cease to be able to act, think, reproduce, or tend to offspring.[[12]](#footnote-12) ‘Countering climate change,’ or pursuing hedonism,’ or ‘achieving well-being, eudemonia, wisdom and/or virtue,’ are not intimately linked to our essence and its continued instantiation.

If the nature of an organism is to be alive, then it is not surprising that the parts of an organism make contributions to its survival. It is not up to us what makes something a part of an organism. In fact, we judge something to be part of the organism, as opposed to a foreign body, on the basis of whether it is caught up in life processes. Life processes are characterized by activities like metabolism, homeostasis, and immunological recognition. Thus, if something is a part of an organism because it is caught up in the life processes that sustain the organism, then it is not arbitrary or a value judgment to claim that the goal of those parts is to contribute to the organism’s survival.

Being caught up in life processes is roughly Peter van Inwagen’s [19, pp. 81-97] answer to the *Special Composition Question*: “What makes the Xs compose a Y?” He claims that ultimately it is the job of biologists to say what life is but adds that he suspects their answer will ultimately be characterized by abstract theormodynamic activities like entropy resistance. He doesn’t want to completely pass the buck to biologists, leaving his readers presently uninformed, so he offers an analogy of life to a club. The club sends out a press gang to obtain new members. They Shanghai new members, indoctrinate them so effectively that they become fiercely loyal, put them to work, and then expel them after using up their resources.[[13]](#footnote-13) He then tells a similar story involving unconscious automata which lack the intentions of the club members. This is basically a story meant to be analogous to processes like metabolism as the body builds, maintains and repairs itself through exchanges with environment.

The event of a life consists of activities that involve the organism’s acquisition, assimilation, maintenance, repair, protection, and then removal of “spent” parts produced by metabolic activities. The nature of organism parthood provides a reason to view contributions to survival as a non-arbitrary goal of the organism. This is true even though not all organism parts are disposed to contribute to survival. All the organism’s parts still depend upon an event whose nature is to unify and integrate the Xs so they constitute a living entity. The same event whose operations are constitutive of life, also renders some non-survival oriented Xs (breasts, nipples, testes etc.) parts of the organism. Other things that facilitate reproduction like one’s partner or fertility technology are not parts of the organism because they are not caught up in such a life. So all the parts of an organism depend on a life event whose essence is to keep the organism alive. Thus, it is reasonable to understand survival as a goal of the organism if all of its parts are either acquired and maintained because they are disposed to contribute to survival or if instead disposed to contribute to reproduction are nonetheless acquired and maintained in virtue of a process whose essence is to bring in parts that keep the organism alive.[[14]](#footnote-14)

Failures to obtain the alternative goals that Kingma offers are not fatal to the organism. Moreover, they are not goals that all the world’s species of organisms pursue. Our parts are not considered parts because they contribute to the goals of ‘countering climate change,’ or pursuing hedonism,’ or ‘achieving well-being, eudemonia, wisdom and/or virtue...” So not only aren’t Kingma’s examples of goals essential to organisms, but nor are any parts ascribed to organisms in virtue of an event whose essence is to serve those goals. Nothing goes in and out of existence in virtue of successfully or unsuccessfully pursuing such Kingma listed goals, unlike Boorse’s goals of survival. Therefore, it strikes me as neither arbitrary, value-laden, or circular to have survival as a goal and part functions determined by their contributions to that goal. Even if we have other *biological* goals, they are neither essential to us, nor tied to our persistence conditions, nor involved with an answer to the special composition question.

**IV. The Non-Arbitrariness of Age as a Reference Class Factor**

Once we have established survival as a goal, we can see more clearly why age is not an arbitrary or value-laden choice of reference class. Age is not ad hoc reference class factor. Age is universal in three senses that render it an appropriate reference class component. First, everyone has an age, not everyone is depressed, alcoholic etc. So, age isn’t arbitrary in the way Kingma’s examples of alcoholism and depression are. Of course, it is not just that everyone has an age but that they make age-typical responses to survival (and reproduction). What does the work is that creatures at each age will have to do things in an age specific manner to survive and reproduce. If organisms never changed during their lives, then age would not be significant. But since change is a constant, how they survive (and reproduce) will be age specific. For instance, when very young in utero, the human brain is not the central integrator of the various embryonic parts, the placenta is [23, p. 31]. But newborns will lose their placenta at birth without becoming diseased. Then the brain takes over as the central integrator. Organisms keep themselves alive through various means at different ages or developmental stages.

Second, no organism who does develop, can do so without passing through the developmental stages associated with different ages. One doesn’t skip being a neonate and toddler and go directly from being a fetus to an adolescent. There is no analogue for any of Kingma’s alternative reference classes. For example, her candidate reference class of depressed people is not universal as is age. Everyone has an age, not everyone is depressed. And unlike aging which progressively increases in ordered quantities, the depressed are not first mildly depressed, then moderately depressed, and finally greatly depressed.

Third, if an organism continues to exist, then older states are universal in the sense of the organism necessarily being unable to continue to age without passing through them. Even if organisms don’t die, they may never become depressed, gay, or a hard drinker etc.

None of the three senses of universality is true for the examples that Kingma provides. It is not a universal condition to be a heavy drinker, blind, homosexual, depressed or someone with Down’s syndrome, or ADHD. These are not stages or conditions all living beings pass through and at which they make distinctive contributions to survival. There is not a homosexual typical contribution to survival. Depression may reduce survival so one can speak of it and its opposite (cheerfulness?) contributing suboptimally or optimally to survival, but unlike age, neither is universal.

Nor does depression and homosexuality have a *pervasive* influence in the body like age. Most bodily functions don’t differ when depressed and when not, while there are virtually countless age-related functions. The body is permeated by age – the young grow certain parts at certain rates that their elders do not. They acquire muscles and agility and bodily control in a particular order, and typically learn to move in different ways at different ages. For example, human babies first learn to roll over, then sit up, and later crawl before walking and eventually running. Even reproduction is timed and not possible for the youngest organism. The onset of puberty is manifested throughout the body only at certain times. So, age doesn’t strike me as a choice of “unjustified and arbitrary reference class” [12, p. 372].[[15]](#footnote-15) Ergo, while uniformity may fail for reasons Kingma provides, the fact that age pervades the body, provides a reason for it being a reference class.

**V. Reproduction as a Goal**

Are we entitled to assume reproduction as goal upon which to judge part contributions as healthy or not healthy? Is it arbitrary or value laden? Moreover, is it problematic if the goal of reproduction can conflict with the goal of survival as not only do single celled organisms reproduce while fissioning out of existence, other organisms like salmon fatally exhaust themselves when swimming upstream to reproduce? I will first respond to the latter worry about goal conflict, and then explain why it is not arbitrary or value laden to posit reproduction as a goal.

To claim that the organism’s nature is sustains itself as alive means that its nature determines its persistence conditions. But that doesn’t entail survival/persistence is its only goal. Reproduction could be a goal as well. Nor does my point about our essence mean that survival trumps reproduction when those ends are in conflict. Organisms can be functioning properly when they do things that will shorten their lives and prevent them from instantiating their essence any longer. A useful analogue might be the Aristotelian conception of one’s nature as a rational animal which means that one persists as long as one is alive and rational. While that nature suggests that one would be functioning properly when acting rational and staying alive, that doesn’t mean that it may never be rational to do something that will likely end one’s life. So, the goals of rationality and animal survival can be in conflict, despite humans being essentially living creatures. Having the continued instantiation of both one’s animal life and rationality as goals doesn’t mean one should never rationally risk the destruction one’s life (and rationality).

It shouldn’t be surprising that if there are different goals, not only should they have different rationales, but sometimes they can’t both be furthered. Such conflicts needn’t undermine the claims made about organism nature and there being more than one goal, but only require a functional hierarchy when both goals be fulfilled. So, if organisms have the goals of survival and reproduction that can conflict, then it may be that reproduction trumps survival without that being reason to doubt that our nature is to be alive.[[16]](#footnote-16) It seems reasonable to hold that reproduction trumps survival when it appears that organisms are designed to or have historically reproduced in ways that are fatal (fissioning out of existence in the unicellular, salmon fatally exhausting themselves to swim upstream to reproduce).

Having established the plausibility of there being a goal whose fulfillment may prevent a creature from continuing to instantiate its nature, let’s turn to whether according the essentially living the additional goal of reproduction can be established in a value-free manner. Recognizing reproduction as a goal fits the etiological account of function that explains the presence of a trait in virtue of what its type did in the past. While noses support glasses and hearts make thumping noises, these don’t explain why there are noses or hearts today [24]. That the function of noses is to breathe and hearts to pump explains their presence and partially explains their structure [3]. So a naturalist concerned with choosing an account of dysfunction has good reason to allow reproduction as a goal given its role in an etiological account of function. It is the this function that reproduction selects.[[17]](#footnote-17)

An appeal to an etiological account of functioning doesn’t help Boorse as it can other naturalists since he wants functions to be defined independently of evolution and etiology. Nevertheless, he could help himself to reproduction as a goal in the previous discussed sense of permeating the species’ design. For example, ascribing the goal of reproduction via fissioning to any single-celled organism such as an amoeba makes sense of the structures produced by the amoeba prior to its division. So, the reproduction via mitotic division could be seen as a goal of an amoeba given its bodily configuration in a way that going out of existence by being eaten by a predator could not. The latter doesn’t make sense of organism structures and behaviors of those eaten even if they lead to the growth of those who eat them or benefit from their remains serving as soil fertilizer.

Furthermore, reproduction explains pervasive body structures, unlike other alleged goals. The male and female body designs are very different in virtue of reproductive differences. Reproduction’s influence on physiology and structure is pervasive even in the unicellular which are sexless. Thus, it might be that such a goal of reproduction can be “read off” the structure of the organism as its species design. This is not true of the rival candidates for goals that Kingma mentions “…’countering climate change,’ or ‘pursuing hedonism,’ or ‘achieving well-being, eudemonia, wisdom and/or virtue’…” [1, p. 601].

Finally, there is the explanatory power of positing goals shared by all other species of organisms and so don’t vary between say plants and people. All organisms have reproduction as a goal and all have survival as a goal until perhaps the end of life when that must be sacrificed to in an act of fatal reproduction. Kingma’s list of goals are not shared by all species of organisms. Boorse is trying to offer an account that will demarcate disease from health in all organisms, not just in human organisms. He frequently criticizes normative opponents for offering accounts of disease that can’t be applied to say plants whose lives don’t involve value judgements. Thus, if the goal is a theory that explains how to demarcate health and disease in general for all living creatures, then an account of reference class factors that covers more species of organisms is a more unified account which thus explains more. It better meets theory choice criteria such as fruitfulness, comprehensiveness, and simplicity.

**VI. Sex as an Appropriate Reference Class Factor**

I appealed to the universality of age as a reason why it wasn’t an arbitrary component of the reference class. So, readers may be thinking that since sex is not a universal condition like age, then it is thus more akin to being depressed, Down’s syndrome, etc. But it is a universal determinable of *multicellular* organisms for which there are determinates that every such creature falls under – male or female.[[18]](#footnote-18) While it is universal that everyone is depressed or not (assuming the law of excluded middle) – moods are not even universal determinables of many of life’s kingdoms. Likewise, for the other categories on Kingma’s list like Down’s syndrome, heavy drinker, pneumonia, homosexual and so forth, even if they recategorized according to the determinates/determinable distinction as lung capability, sexual orientation, mood etc. The determinables of Boorse and other naturalists are not as restricted or localized as Kingma’s. For example, there are no moods of plants but every plant has an age and sex. Part of the appeal of Boorse’s account of health is it easily extends to non-human animals and plants, unlike most normativist accounts. So, there is reason to include factors in reference groups that cross species as they extend to demarcate health from disease for all species rather than one or a limited number of species.

There is another reason to believe that sex has a non-circular, non-value laden justification to be a reference class. Females and males are anatomically different in order to make distinct contributions to reproduction. These differences typically pervade the body unlike the other possible reference classes mentioned by Kingma. It is not just that the female produces the larger gamete than the male [25-26]. Gamete production, care, and delivery involve very different bodies. So much of the body design and operations of multi-cellular organisms is based upon sexual preference. Even if there are rare exceptions to this rule, the rule operates to an extent not found in any of Kingma’s alternative candidates. Kingma’s list of arbitrary traits don’t pervade the body even if they show uniformity.[[19]](#footnote-19) If they did, diagnosis of medical conditions would be something laymen could do as often and as well as they distinguish the sexes. This is not to say that laymen can’t pick out obviously pathological states on the basis of appearance such as Down’s syndrome. My point is not about the ease of categorization because of some very salient characteristics, but the extent of physical differences.[[20]](#footnote-20) [[21]](#footnote-21) Moreover, I suspect sex (especially at certain ages) pervades the body to an extent much greater than any disease, even easy to identify diseases like Down’s syndrome. So, humans with such diseases are more similar to those without it than male humans are to female humans.

Finally, if we assume the organism’s physiological ends are not just survival but also reproduction, then the latter will give us sex as a reference class because it divides organisms up in terms of contribution to reproduction. This is not true of say homosexuality as a reference class. Thus given the goals of reproduction, sex is not a choice of “unjustified and arbitrary reference classes” [11, p. 372). Appealing to a goal to justify a reference class is not circular in the way that is appealing to health to come up with distinctions used to demarcate the healthy from the pathological.

**VII. Conclusion**

The role organism goals of survival and reproduction should play in health determinations can be justified, respectively, by considerations of our essence and an etiological account of function. However, some naturalists, like Boorse, will eschew etiological accounts. Nevertheless, just as people could know the eye’s function was to see even though they didn’t know anything about its evolutionary past, we may “read off” organism goals from pervasive bodily structures and behavior. There are no value claims or assumptions of health infecting these judgements of goals. Every organism of every species pursues the goal of survival, even if it is occasionally trumped by reproductive goals. Kingma’s alternative goals are not only not essential as survival is to every species but they are not even found contingently amongst every species as is reproduction.

All organism parts are so because they were assimilated and maintained by an event that is constitutive of organisms being alive. If the nature of that event is to keep organisms alive, there is nothing surprising or arbitrary or inappropriate in claiming that the parts acquired to keep the organism alive are healthy (functioning properly) when they are promoting the goal of survival. That other parts have functions that don’t enhance survival is no reason to deny that survival is an organism goal when even those other parts are only parts because of an event involving metabolic activities that continues as long as it serves to keep the organism alive.

If we accept an etiological account of function in which parts are present with the structure that they have due to the historical contribution of entities of that type enabling their ancestors to survive long enough to reproduce successfully, then appeals to reproductive history can explain why sex should be a reference class component and a key to determining healthy functioning. Reproductive histories differ by sex, thus rendering sex a natural and reasonable classification for judging how organisms meet the goal of reproduction.

Moreover, the universality of age (and the universality in multi-celled organisms of the determinable sex), as well as the pervasiveness of age and sex in body structures and activities, provides non-arbitrary and non-value laden reasons to consider them components of the reference class. Organism parts make the contributions they do towards reproduction and survival in accordance with their age and sex-related structures of their species. Alternative goals and reference class factors don’t have such complementary explanatory roles. None of the alternative goals Kingma offers favor any of the alternative reference classes in the way survival links to age and reproduction to sex.

**Bibliography**

1. Kingma, Elselijn. 2014. Naturalism about health and disease: Adding nuance for progress.

*The Journal of Medicine and Philosophy* 39: 6, 590–608.

2. Boorse, Christopher. 1997. A rebuttal on health. In *What is disease?* eds. James M. Humber and

Robert F. Almeder, New York: Humana Press. 1-134.

3. Wakefield, Jerome. 1992. The concept of mental disorder: On the boundary between biological

fact and social values. *American Psychologist* 47:3, 373-389.

4. Kraut, Richard. 2007. *What is good and why? The ethics of well-being.* Harvard University Press.

5. Hershenov, David and Hershenov, Rose. 2017. If abortion, then infanticide. *Theoretical*

*Medicine and Bioethics* 38: 387-409.

6. Feit, Neil. 2017. Harm and the concept of medical disorder. *Theoretical Medicine and Bioethics*

38:5, 367-385.

7. Talbot, Thomas. 2017. Heaven and hell in christian thought. *Stanford Encyclopedia of Philosophy,*

*https://plato.stanford.edu/entries/heaven-hell/*

8. Adams, Marilyn. 1975. Hell and the god of justice, Religious Studies 11: 433–447.

9. DeRose, Keith. Universalism and the bible: The really good news

https://campuspress.yale.edu/keithderose/1129-2/

10. Epicurus. Letter to menoceus.

11. Kingma, Elselijn. 2007. What is it to be healthy? *Analysis* 67: 128-133.

12. Kingma, Elselijn. 2013. Naturalist accounts of mental disorder. *Oxford Handbook of Philosophy*

*and Psychiatry.* Eds. K.W.M Fulford, Martin Davies, George Graham, John Sadler, Giovanni Stanghellini, and Tim Thornton. 363-384.

13. Boorse, Christopher. 1977. Health as a theoretical concept. *Philosophy of Science* 44:4, 542-573.

14. Engelhardt, Tristan. 1975. The concepts of health and disease. In *Evaluation and explanation*

*ion the biomedical sciences,* eds. T. Englehardt and S.F. Sicker. 125-141,Reidel.

15. Engelhardt, Tristan. 1986. *The Foundations of Bioethics*. Oxford University Press

16. Brown, W.M. 1985. On defining ‘disease.’ *Journal of Medicine and Philosophy* 104, 311-328.

17. Agich, G.J. 1983. Disease and value: A rejection of the value-neutrality thesis. *Theoretical Medicine*

*and Bioethics* 4: 27-41.

18. Olson, Eric. 1997. *The human animal:* *identity without psychology.* Oxford University Press.

19. Van Inwagen, Peter. 1990. *Material beings.* Cornell University Press.

20. Bedau, Mark. 1998. Four puzzles of life. *Artificial Life* 4: 125-145.

21. Smith, Maynard. 2000. Life and information. *The origins of life: From the birth of life to the origin*

*of language.* Oxford University Press.

22. Baker, Lynne Rudder. *Persons and bodies: A constitution view.* 2000. Cambridge University Press.

23. Condic, Maureen. 2016. Embryos and integration. *XXVI Life and Learning Conference: Proceedings of*

*the Twenty-sixth Annual Conference of the University Faculty for Life.* 295-323.

24. Wright, Larry. 1973. Functions. *Philosophical Review* 82: 2. 139-168.

25. Bird, Alex, Is sex binary? 2019. *Arc Digital.* <https://arcdigital.media/is-sex-binary->

16bec97d161e

26. Bird, Alex, 2019. Is sex socially constructed? *Arc Digital.*

https://arcdigital.media/is-sex-socially-constructed-81cf3ef79f07

27. Kass, Leon. 1997. The wisdom of repugnance: Why we should ban the cloning of humans.

*The New Republic* June 2. 216:22, 17-26.

1. Since most people want to reproduce, infertility will typically be considered harmful. However, neither the degree of the harm of infertility nor the number of people for whom it is harmful is a great as the response to early death. [↑](#footnote-ref-1)
2. Standard examples include the benefit of cowpox during a smallpox epidemics, flat feet keeping one out of a suicidal war, infertility after having a dozen horrible kids and an unhelpful partner, and “pneumonia being an old man’s friend.” [↑](#footnote-ref-2)
3. My discussion here of metaethical issues is indebted to a referee. [↑](#footnote-ref-3)
4. This claim can be extended to hybrid accounts like Wakefield’s account that entails disorders consist of two necessary (and jointly sufficient) conditions - dysfunction and harm [3]. See Feit [6] for a careful analysis of the problems that overdetermination and preemption of harm pose for packing harm into the definition of disease. [↑](#footnote-ref-4)
5. Readers could insist that there are other prima facie harms like the loss of the goods of friends and family. My response is that we can imagine unending, untreatable pain or coma already severed the patient from those goods prior to the fatal disease. Alternatively, we can imagine an unhappy hermit and orphan. (Keep in mind that since we are involved in conceptual analysis, all we need is one counterexample to undermine normativism.) Considerations like these suggest another counterintuitive aspect of normativism and that is there could be cause of death that is a disorder for one group but not another because of their different attitudes towards more life. One population could welcome death as they are bored or rendered miserable by more life, while the other regrets the same disease shortening their lives. [↑](#footnote-ref-5)
6. Kingma occasionally states that a value-free account *can’t* be provided [11, p. 128; 12, p. 370) but a referee points out that she needs only the weaker claim that the onus is on Boorse to show that the choice of reference class is value-free and that he hasn’t yet done this. [↑](#footnote-ref-6)
7. Boorse does leave open that homosexuals, like sterile working insects, can play a role in kin reproduction. [↑](#footnote-ref-7)
8. Likewise, if we chose the depressed rather than sex as a reference class component, the grief of the depressed would not be pathological. [↑](#footnote-ref-8)
9. She admits that she is not the first to challenge the value neutrality of Boorse’s BST’s goals [14-17]. [↑](#footnote-ref-9)
10. Terminators like Olson [18], van Inwagen [19], and myself believe that we pass out of existence at death. Anti-terminators believe that we can become corpses and remain so until there is too much decay. But even Anti-terminators are likely to assume that we had to come into existence as living beings even if we could persist without continuing to be alive. They would accept that something becomes a part of an organism part only if it was caught up in life processes, though it can remain a part as long as sufficient structure remains. So my point three paragraphs below in the main text about the Xs being parts of an organism in virtue of their being caught up in life processes that contribute to survival provides a reason for survival to be an organism goal even if Anti-terminators are correct that corpses are identical to the earlier living organisms. The parts of the corpse are considered parts because they earlier were caught up in life processes. The Anti-terminator does not allow the corpse to acquire new parts. [↑](#footnote-ref-10)
11. Some biologists are misled by the fact that survival serves reproduction from an evolutionary perspective and thus fail to see how survival is part of our essence and reproduction is not. I contend that conceptual analysis and thought experiments show that we would be essentially living entities even if we didn’t reproduce, didn’t evolve for we couldn’t mutate, or were alive long after we cease to serve any reproductive function, even to our grandchildren. Surely one doesn’t want to insist that it was metaphysically impossible for the first living organisms to exist without being able to reproduce. Olson [17] also provides support for this position. For views that evolution is essential to life, see Bedau [20] and Smith [21]. If I am wrong and we are essentially reproducing entities then my thesis is actually stronger as survival is just a necessary means to reproduction. Then I could get the goal of survival as an intermediate goal towards survival and disposable of when reproduction is served by loss of life. [↑](#footnote-ref-11)
12. Other accounts of personal identity may appeal to value judgments. See Baker’s defense of our uniqueness in the animal kingdom [22]. Her awe of our rationality and first-person perspective drives her claim that we must be ontologically distinct in virtue of those impressive traits. Animalists like myself, think our most valued traits are irrelevant to our essence. So, we can’t easily be accused of a value judgment in our choice of our theory of personal identity. Of course, there are philosophical and scientific values involved in theory choice but those are just the standard comprehensiveness, accuracy, explanatory power, consistency, fruitfulness, and perhaps simplicity. [↑](#footnote-ref-12)
13. An organism can replace most if not all of its parts. Some parts it can survive the loss of without replacing because of either redundancy or they weren’t involved in essential life processes. If there are any parts that an organism can’t lose without going out of existence, then they are essential parts. So, for example, if one defends the brain death criterion, perhaps then the brain is an essential part of the organism as it is the central integrator, responsible for making the Xs the parts of a living body. Replace the brain and you replace the human being. But there is a second sense in which parts are generically essential which allows them to be lost and replaced (unlike the fore-mentioned brain) without the original organism going out of existence. These are parts that must contribute to the organism continuously realizing its essence, i.e., staying alive, but any qualitative duplicate will do. So no particular microscopic part (say any cell or carbon particle) is essential in the first sense but they or duplicates are essential in the second generic sense in that they are there because parts of their kind are essential to keeping the organism alive and instantiating its essence. [↑](#footnote-ref-13)
14. A referee points out that my part theses don't seem necessary for the claim that organisms are essentially living and so have survival as a goal. So even if I am wrong about parts only being parts because of an event whose nature is to preserve the organism, I can argue that it is natural to judge parts by their contribution to an essential goal of the whole. [↑](#footnote-ref-14)
15. That is not to say that homosexuality could not become a form of reproduction in the future if they form a class that reproduces by say gene splicing. [↑](#footnote-ref-15)
16. Usually, our goals are not only compatible but often are complementary as all organisms must survive to reproduce, successful reproduction produces offspring that survive, and most multi-cellular organism will seek to continue to survive after reproducing. [↑](#footnote-ref-16)
17. I understood Kingma to be attacking naturalism, believing her critique to be not limited to Boorse and his followers but a problem for naturalists who reject his Bio-Statistical Theory (BST). They too will appeal to reference classes for even if they explain functions in terms of selection, it is women of certain ages that were selected to be capable of pregnancy, not young males. I see my paper’s project as defending naturalism, not just Boorse’s version of it. So, I think it is permissible for me to consider drawing upon etiological accounts to support reference class factors. Evidence that Kingma intends her critique of value free reference classes to extend beyond Boorse’s theory BST to other naturalist accounts can be found in the sections entitled *“*Naturalists’ Burden of Justification and “Naturalism and Pluralism” [12, pp. 370-371]. After objecting to Boorse with her hypothetical XST theory she writes: “The earlier critique has wider implications for naturalistic accounts of disorder: it increases their burdens of justification. Naturalists central claim is that disorder is not a reflection of social values or norms, but a feature of the natural world…but the earlier argument suggests that this is not enough; giving a definition or account of the concepts ‘health and disorder’ in value free terms doesn’t suffice for proving that these concepts are completely value-free. As the example of the XST demonstrates, accounts stated in value-free terms can still embody deeply held social values. It follows that if naturalists are to meet their main claim, they have to meet the additional challenge: demonstrate that there is some value free justification for employing the particular naturalistic concept they define, rather than another one… whatever the right account of function turns out to be – we end up with a problem, very much similar to the one the BST faces: any particular account of disorder as dysfunction, while describing disorder in value free terms, has to choose and employ a particular way of carving up functional architecture, rather than another to determine what are dysfunctions“ (2013, 370)*.*  So I don’t think that Kingma will be satisfied with only Boorse-style naturalism failing to provide non-normative justification for reference classes. [↑](#footnote-ref-17)
18. The standard example used to elucidate the determinable/determinate distinction is that of red as a determinable and anything red will be a determinate like scarlet, or crimson or burgundy etc. The determinable/determinate classifications are sometimes contrasted with the genus/differentia classification where say the genus animal is qualified by rational. There is no qualifier to add to red to explain why crimson is different from scarlet. [↑](#footnote-ref-18)
19. See Kass [27] for an account of the ontological significance of sexual reproduction which lends support to the claim of sex as an appropriate reference class. Asexual reproduction is found in only the lowliest of beings. Sexuality “brings with it a new and enriched relationship to the world…a desire for union, the animal antecedent of human eros and the germ of sociality… not by accident” are human animals more aspiring, social, open and intelligent” [2, pp. 21-22]. So much of the culture is a consequence of our pursuit of mates. Even lower animals have their activities determined greatly along sex lines. This can’t be said about any of the proposed alternative reference classes. [↑](#footnote-ref-19)
20. I admit that some diseases are pervasive in that they show up in every cell. But being pervasive in the sense of being present in every cell is different from being phenotypically pervasive. [↑](#footnote-ref-20)
21. This point can be extended to age as well. The differences between embryos and adolescents is greater than any differences between those in the reference classes Kingma offers like depressed people and those who are not. [↑](#footnote-ref-21)