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What is Enhancement?

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Biography
Catherine Gee is a PhD student in philosophy at the University of Waterloo in Waterloo, Ontario. Her current work is on the philosophical and ethical issues with enhancement technologies with a special focus on authenticity. Her other primary research interests are ethics, bioethics, and philosophy of psychiatry.

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Abstract
Defining enhancement involves the normative concept of 'good health' which is the center of considerable philosophical debate. Determining what counts as a good level of health is required to establish a baseline that anything over and above denotes enhancement territory and anything below would be considered a treatment. I argue the best way to determine health is via a modified version of Wakefield's two criterion for disease. If a case is able to meet both criterion then it can be considered diseased, and thus any intervention involved can be deemed a treatment. However, if a case is unable to meet the two criterion then it is absent disease and therefore healthy and any intervention is thus an enhancement.

Keywords
Enhancement, Treatment, Health, Disease

An enhancement technology is a terminology designated for the things we use to augment or enhance our physical or mental traits. Some are so 'low tech' or common we may not even think of them as enhancements as they are part of our daily lives. Some examples of these more basic enhancements include hair dye, a strong cup of coffee, high heels, and push-up bras. The hair dye allows us to change our hair colour or hide our grays, coffee makes us more alert and awake, high heels make the wearer taller, and push-up bras make breasts appear larger and more lifted. Enhancements can be as simple as the ones listed here or require more complicated technologies such as surgery or psychiatric medication. One of the most frequently used definitions of enhancement is Eric Juengst's which states enhancements are "interventions designed to improve human form or functioning beyond what is necessary to sustain or restore good health" (1998, 29). Defining enhancement involves the normative concept of 'good health' which is the center of considerable philosophical debate. Determining whether a particular intervention qualifies as an enhancement versus a treatment therefore depends, in part, on what constitutes 'good health'. Agreeing on what counts as a good level of health is required to establish a baseline that anything over and above this line denotes enhancement territory. The purpose of this article is to tackle this problem in order to find a useful definition of health (and disease to contrast it with) to establish this baseline upon. In the first section I will discuss how we can determine whether an intervention is better classified as a treatment or an enhancement. The second section

will dig deeper into this distinction by examining three main accounts of health and disease to determine which one provides the best baseline upon which to ground the treatment versus enhancement distinction. Naturalism, normativism, and a hybrid account that blends the two will be discussed and I will argue the hybrid account is the best view for understanding health in a way that allows us to distinguish treatment from enhancement. In the third section I will apply this account of health to some examples to demonstrate how the two criterion in the hybrid account can be used to distinguish treatment from enhancement. This article merely scratches the surface in the conceptual and philosophical issues surrounding enhancement but serves as a starting point to introduce the reader to the technological interventions that are becoming increasingly popular and often surrounded in controversy.

I. What is Enhancement?

Enhancements are often contrasted with treatments and the distinction is grounded in a baseline of good health. Often the technology is the same in both cases, a treatment is intended to restore a patient from below an average level of health to a baseline level of health whereas an enhancement is used to bring a patient to a higher level of health than the baseline. This comparison can be referred to as the treatment verses enhancement distinction and it seems rather intuitive at first glance. For example, consider the use of anabolic steroids in two different individuals, one who has a muscular disorder so the steroids help restore his weakened muscles to a baseline level of health, versus one who is a body builder and uses the steroids to make his already large muscles even bigger and stronger. Another example is the use of Ritalin in an individual with an attention-deficit disorder to restore her attention to a normal level so that she may focus and complete every-day tasks, compared to a student without attention problems who left studying for an exam to the last minute and uses Ritalin as an aid to improve his focus so he can cram for the exam. While the technology is the same in each example – steroids in the first and Ritalin in the second – it is the baseline level of health that determines whether the use of the technology is a treatment or an enhancement (treatments for the individuals with the muscular disorder and attention-deficit disorder, enhancements for the bodybuilder and the student). While these examples make the distinction between treatment and enhancement relatively easy to distinguish not all situations are quite this straightforward, especially in cases of psychological enhancements.

Peter Kramer's account in *Listening to Prozac* of the first patient he treated with Prozac is an example of such a case. Tess was a woman in her early thirties who was

referred to Kramer because she was clinically depressed. After being put on Prozac Tess' life was transformed; she felt rested and hopeful, more relaxed yet energetic, she laughed more frequently, and a new social life bloomed as a result. "She was astonished at the sensation of being free of depression" recalls Kramer (1997, 7). All aspects of her life were changed as a result, and for the better, it seemed. After about nine months Tess went off Prozac and continued to do well. However, after about eight months off medication Tess told Kramer she was slipping and claimed "I am not myself" (1997, 10). Tess was no longer depressed, but wished to take Prozac again to feel as good as she had when she was on it. When Tess first started seeing Kramer she met many of the signs and symptoms of depression such as "tears and sadness, absence of hope, inability to experience pleasure, feelings of worthlessness, [and a] loss of sleep and appetite" (1997, 3). It was clear she was not well and Kramer used Prozac as a means to restore her to health, thus the Prozac was used as a treatment. But what of her request to take it again in the absence of depression, would this qualify as a treatment or an enhancement? Tess asserted Prozac "had lent her surety of judgment; she no longer tortured herself over whether she was being too demanding or too lenient" (Kramer 1997, 9). "It makes me confident" she told Kramer (1997, 9), and it was for these reasons Tess wanted another prescription, not because she was hopeless and not sleeping or eating. It is more difficult to determine whether Tess' request for a second prescription for Prozac qualifies as a treatment or an enhancement than it is in the steroids and Ritalin examples above. This is because a baseline level of health is not an easy concept to define and will vary depending upon which account of health one is using. Thus, before we can establish a baseline we need to determine the best account of health and disease that should be used to build this baseline on. The next section will discuss the three main views of health in the philosophical literature for this purpose.

II. Accounts of Health and Disease

To review, the distinction between treatment and enhancement depends on a clear definition of health, as anything below a standard baseline level of health can be considered a disease in need of treatment and anything above a standard of health would be considered exceptionally healthy and any intervention would be regarded as an enhancement. However, there is little consensus on what exactly "health" entails, as it can be regarded as simply as "freedom from disease" or as broadly as the World Health Organization's notion of "a state of complete physical, mental, and social well-being" (Parens 1998, 3). This section will focus on three main views of health in the

philosophical literature: naturalism, normativism, and a hybrid theory that combines the advantages of both views. Naturalism argues that disease is a bodily malfunction that causes harm, whereas normativism asserts that disease is merely a human construct or value-judgement as there is no biological basis for disease (Murphy 2015, s. 2). Hybrid theories blend the two and assert that the most accurate account of disease is a bodily dysfunction that we disvalue. I will discuss each view and argue that a hybrid view of health is the best view to form a baseline level of health upon which we can distinguish health from disease, and in turn determine whether an intervention is better classified as a treatment or an enhancement.

(a) Naturalism

Naturalists pursue definitions based on the ideal of value-free scientific theory and attempt to highlight that which is biologically natural and normal for a species (Ereshefsky 2009, 221). The focus for this approach is on physiological and psychological states to determine if an organ or bodily system is normal or functioning properly (Ereshefsky 2009, 221). Naturalism is the most prominent view in the literature (Ereshefsky 2009, 222, for examples see Kendell 1975, Scadding 1990, Wachbroit 1994) and within this view Christopher Boorse's work is considered to be the most well-developed and influential. Boorse argues that health is the absence of disease, where "disease" refers to an internal state "that depress a functional ability below species-typical levels" (1969, 542). Thus, for Boorse, "[h]ealth as freedom from disease is then statistical normality of function, i.e., the ability to perform all typical physiological functions with at least typical efficiency" (1969, 542). The benefit of his approach, he argues, is that it removes the problems of normativism entirely as his theory is founded in natural science, not the results of an evaluative decision (1969, 543). The most common objection to Boorse's argument is that as a result of removing values from the equation, naturalism does not properly reflect our use of the terms "health" and "disease" (Ereshefsky 2009, 222). A stock example used to demonstrate this point is homosexuality, as it was only rather recently that the American Psychiatric Association (APA) removed homosexuality from their *Diagnostic and Statistical Manual of Mental Disorders* and thus no longer considered it to be a disease (Ereshefsky 2009, 222). Ereshefsky argues, however, that "[t]he change in classifying homosexuality as a disease was not accompanied by a change in our medical knowledge of homosexuality. What changed, some argue, is whether or not homosexuality is a disvalued state by the APA" (2009, 222). This is the biggest objection

to naturalism, that it is simply impossible to define health or disease without taking values into account[1]. As such, this is the launch point for the normativist position.

(b) Normativism

Normativists argue that biological processes alone cannot determine whether or not someone is healthy or diseased, as it is our human values which make this decision (Murphy 2015, s. 2). Unlike the naturalist view which argues if a system is objectively malfunctioning it is a clear indication a disease is present, normativism asserts there are no objective malfunctions. The system or process is judged by us to be unusual or abnormal "because they depart from some shared, usually culturally specific, conception of human nature" (Murphy 2015, s. 2). The physiological or psychological states we desire we label 'healthy' and the ones we do not wish to have are called 'diseased' (Ereshefsky 2009, 223). Biological systems themselves are neutral, it is the value we attribute to them that determines whether we find them good or bad (Margolis 1976, Goosens 1980, Sedgwick 1982). Engelhardt explains this well in the following passage:

> Disease does not reflect a natural standard or norm, because nature does nothing – nature does not care for excellence, nor is it concerned for the fate of individuals qua individuals. Health, insofar as it is to indicate anything more than the usual functions or abilities of the members of the species, must involve judgements as to what members of that species should be able to do – that is, must involve our esteeming a particular type of function. (1976, 266)

Engelhardt is clear that by emphasizing the role value judgements play in our conceptions of health and disease does not deny "that there are real causes of disease or real empirical factors important in maintaining health or causing disease", just that we need to acknowledge that discussions of health and disease "presupposes evaluations of ourselves and our ambiances" (1976, 267). The problem with Engelhardt's view is that without natural and objective standards to define disease it can become far too subjective and we are left in the position of not being able to disagree with the claim a particular condition is a disease. Ereshefsky uses an example in the literature about American doctors in the nineteenth century who thought that slaves who attempted to escape suffered from a disease called "drapetomania" (2009, 224). While our contemporary perspective disagrees

1. This objection applies more widely than just normativism – the idea that science itself is value-free is a highly controversial issue.

with this assessment and thinks the attempt to escape slavery and be free can hardly be considered the symptom of a disease, a normativist, claims Ereshefsky, cannot say these nineteenth century physicians were objectively wrong. All Engelhardt and other normativists can argue is that we merely have different values or ideologies than those doctors (Ereshefsky 2009, 224). The problems with this are obvious and subject normativism to issues of relativism by relying on social constructs and values alone. Thus, a better account of health and disease is needed to balance the weight value carries in distinguishing healthy from unhealthy.

(c) Hybrid Theories

There are combinations of naturalist and normativist views called 'hybrid theories' that attempt to use the best features of each view. A main motivation for these theories is to fix the problems with normativism, specifically that normativism allows any undesirable state to be considered a diseased state (Ereshefsky 2009, 224). The hybrid solution is to argue 'disease' is best defined as "disvalued states with the proper biological etiology" (Ereshefsky 2009, 224). A well-known hybrid account is Wakefield's who argues:

> A condition is a disorder [disease] 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). (1992, 384)

Thus the hybrid account has two criterion for disease, a state must be both disvalued and biologically dysfunctional, instead just one criterion as both naturalism and normativism endorse (for another hybrid example see Reznek 1987). As a result hybrid theories narrow the range of cases that qualify as a 'disease' and avoid the counterexamples that render naturalism and normativism problematic (Ereshefsky 2009, 224). However, this account is not exempt from its own problems, namely that due to its restrictive nature it too quickly dismisses controversial cases that we might still want to consider a disease (so we can receive treatment for it) but it may not meet Wakefield's two criterion (Ereshefsky 2009, 224). Ereshefsky uses the example of a woman unable to achieve an orgasm. The function of the clitoris, he explains, is described as providing a female with the capacity to have an orgasm, but this capacity was not selected for via evolution, it

is merely a by-product of selection for the male orgasm[2] (2009, 224). Thus, a woman's capacity to have an orgasm does not have an evolutionary function which means it fails Wakefield's section criterion, and as such cannot be considered a disease. Ereshefsky argues "[b]ecause Wakefield equates health with no disease, controversial cases fall on the health side of the health-disease dichotomy. A woman's inability to have an orgasm is [therefore, according to Wakefield] a healthy state (no dysfunction)" (2009, 224).

Wakefield argues that the "failure of a naturally selected function is necessary for disorder" and rejects claims that biological disorders can be heterogeneous with evolutionary dysfunctions being only one type of dysfunction (1999, 376). His insistence on the evolutionary basis of the biological dysfunction is to ensure we are looking at the right sort of dysfunctions (ones that are objectively dysfunctional), and not ones that fail to function "in a socially preferred manner" (based on values alone) (Wakefield 1992, 381). By limiting the concept of dysfunction to natural functions selected for via evolution that have gone awry Wakefield attempts to "distinguish dysfunction from other disvalued conditions" (Sadler and Agich 1995, 222). To illustrate this, consider the nose which functions to hold up one's glasses and the heart which functions to pump blood throughout the body (Wakefield 1992, 381). If someone has a nose that is shaped in a way that does not allow it to hold up his eyeglasses it can be said his nose is failing to function in this manner, and if his heart fails to pump his blood properly it too would be failing to function. However, argues Wakefield, we cannot say the oddly-shaped nose that fails to hold up eyeglasses is a nasal disorder, but we would say the heart failing to pump blood is a dysfunctional heart. The difference between the two cases is that holding up eyeglasses is not the *natural* function of the nose (it is merely a way we use it in addition to its actual purpose[3], to breathe and smell); whereas the natural function of the heart *is* to pump blood, so when the natural function fails it is said to be disordered (Wakefield 1992, 381-382). In sum, for Wakefield, "[o]nly natural functions are relevant to disorder attributions" (1999, 375).

This argument is far from being widely accepted there are critics who disagree with Wakefield rooting biological dysfunction in evolutionary theory (Bergner 1997, Lilienfeld & Marino 1995, Sadler & Agich 1995). I also disagree with this constraint as there is far too much controversy in determining which biological functions have been naturally selected and which have not that it seems more trouble than it is worth to insist on

2. Note this is a controversial claim.

3. He refers to functions such as these as "intentional uses" (Wakefield 1999, 375).

including evolutionary theory in a concept of health. Furthermore, I think it is overly restrictive and unnecessary for my present purpose. While I agree with Wakefield's motivation to ensure not just any disvalued condition can be considered a disorder, this can be achieved by using his two criterion definition of disorder and removing the evolutionary constraint. To reiterate, Wakefield's two criterion are:

> (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). (1992, 384)

I prefer the inclusion of the term "natural function" rather than just using "function" on its own to narrow the types of functions we might consider candidates for biological dysfunction. Back to Wakefield's example of the nose, it seems intuitive that the natural biological function of the nose is to breathe and smell, not to hold up one's eyeglasses. Thus, if there is a dysfunction of a biological mechanism that impedes one's breathing or smelling through their nose (and breathing and smelling through the nose are functions we value) than this dysfunction can be said to be a disease or disorder of the nose, unlike if one could breathe and smell fine but one's nose was shaped in such a way that it failed to hold up one's glasses effectively. Even if we valued noses holding up our glasses, this is not the nose's natural function and as such it is not a disease when it cannot.

In conclusion, despite potential problems with the hybrid account I think the combination of the naturalist and normativist criterion gives us the best shot at a cohesive and practical account of health to base the treatment versus enhancement distinction on. The solution to controversial cases can be resolved using some common sense when using my modified version of Wakefield's two criterion to distinguish disease. These criterion are:

> (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 (the explanatory criterion).

If a case meets both of these criterion then it can be said to be properly classified as a disease and if it does not then we can say the individual is healthy. Thus, health can be properly classified as "absence from disease".

III. Using the Hybrid Account to Distinguish Treatment from Enhancement

Recall from the first section that often the same technological intervention can be used to both treat and enhance depending on the circumstances. How we can distinguish between the two is to establish a baseline level of health that anything beyond that point can be considered an enhancement as it would be making an already healthy individual even healthier or more capable, and anything below can be considered a treatment as it could restore the individual to a baseline level of health. I have argued in section two that health is the absence of disease, and disease can be determined by using a modified version of Wakefield's hybrid theory of health. Therefore, disease occurs when the condition causes some harm or deprivation of benefit to the person and is the result of the inability of some internal mechanism to perform its natural function. Applying this formula to the example of the use of anabolic steroids in two different individuals can tell us why the use of steroids by the person with a muscular disorder is best classified as a treatment and why the body builder's use of the same technology is an enhancement. The muscular disorder causes the first individual harm and deprives him of the benefit of properly functioning muscles (criterion one) and his weak muscles are caused by the failure of his bodily mechanisms to perform their natural function (criterion two). As a result of meeting both these criterion the individual can be considered diseased and the anabolic steroids can be used as a treatment to help restore his weakened muscles to a baseline level of health (a state that fails to meet both criterion). The body builder, in contrast, is unable to meet both of the criterion. His large and fully functioning muscles do not cause him harm as valued by society in general, although perhaps the case could be made (particularly within the body building community) that his muscles failing to grow beyond their already above-average size could be considered a harm in virtue of his body-building ambitions. However, the body builder would be unable to meet the second criterion, as his muscles failing to grow as big as he wants them to is not the result of some internal mechanism failing to perform its natural function. His muscles are functioning just fine, significantly above average in fact. As the body builder is unable to

meet both criterion for disease he is therefore healthy, and as such if he used steroids to further increase the size of his muscles it would be an enhancement.

This is a fairly straightforward case, but how effective is the hybrid theory for more complicated ones? Recall the Tess case from the first section. Tess had two main complaints that led to the consideration of prescribing her Prozac by her doctor. She was initially referred to him because she met many of the signs and symptoms of depression – she wasn't sleeping or eating well, she felt hopeless, sad, worthless, and was no longer able to experience pleasure. These symptoms meet both criterion for disease. First, it is clear that her symptoms were causing Tess harm for they severely hindered her quality of life from how well she slept and ate to how she felt. Secondly, while there is not enough information in the example for us to know the cause of Tess' depression[4] there are numerous complicated physical causes of depression that are the result of a biological mechanism failing to perform its natural function. Even if the cause of Tess' depression was not initially physical in nature, the resulting depression does affect her neural chemistry which impedes its natural function (a healthy brain is not a depressed brain). Therefore, I argue that the reason for Tess' first visit to her doctor met both criterion for disease and thus his prescription for and her use of Prozac is best classified as a treatment.

After her depression had been cured and she had been off Prozac for about eight months Tess complained she no longer felt like herself and wanted to feel as good as she had when she was taking the medication. Feeling "good" for Tess was the self confidence she felt when on Prozac, she felt better about herself and the decisions she made. Tess seemed to be unable to feel the level of self-confidence she did when she was medicated. Should a lack of self-confidence be considered a disease? It could be argued that a lack of self-confidence could meet the first criterion for disease, as it is something our society values. We tend to respect those who are self-assured and have more confidence in the decisions made by someone who is sure of herself than in someone who is not. However, a lack of self-confidence is not the result of a biological function gone awry and thus it fails the second criterion. Self-confidence is a psychological trait that exists on a continuum that people possess to varying degrees – some have an over-abundance of self-confidence, some have very little, and most probably fall somewhere in between the two extremes. Simply because our society values self-confidence does not mean that an absence of it is a disease. That is the purpose of the second criterion for disease – to ensure not everything that society disvalues counts as disease. Therefore, Tess' lack of self-

4. Kramer himself may not have known as often clinicians are unable to know the exact cause of mental disorders.

confidence is unable to pass both the value and the explanatory criterion for disease and as such, despite her lack of self-confidence, she is healthy. Since Tess is healthy her second request for Prozac is best classified as an enhancement.

In closing, I have argued in this article that in order to distinguish treatment from enhancement we need to establish a baseline level of health upon which to ground the distinction. Any technological intervention above and beyond this baseline is best classified as an enhancement and any intervention below this baseline should be considered a treatment. The best way to determine health is via a modified version of Wakefield's hybrid theory of disease. In order to be considered a disease the impairment must meet the following two criterion:

(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 (the explanatory criterion).

If an impairment does not meet both criterion then it is best considered to be healthy. Health is defined as the absence of disease and technological interventions aimed at making the diseased healthy are treatments, and interventions aimed at making the healthy even healthier are best classified as enhancements.

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