# UNDERSTANDING THE CONCEPT OF HEALTH

# Lennart Nordenfelt,

Dept of Health and Society, Linköping University, lenno@ihs.liu.se

ABSTRACT: Contemporary philosophy of health has been quite focused on the problem of determining the nature of the concepts of health, illness and disease from a scientific point of view. Some theorists claim and argue that these concepts are value-free and descriptive in the same sense as the concepts of atom, metal and rain are value-free and descriptive. To say that a person has a certain disease or that he or she is unhealthy is thus to objectively describe this person. On the other hand it certainly does not preclude an additional evaluation of the state of affairs as undesirable or bad. The basic scientific description and the evaluation are, however, two independent matters, according to this kind of theory.

Other philosophers claim that the concept of health, together with the other medical concepts, is essentially value-laden. To establish that a person is healthy does not just entail some objective inspection and measurement. It presupposes also an evaluation of the general state of the person. A statement that he or she is healthy does not merely imply certain scientific facts regarding the person's body or mind but implies also a (positive) evaluation of the person's bodily and mental state.

My task in this paper will be, first, to present a number of prevalent ideas about health and illness, and second, to scrutinize the two principal rival types of theories, the biostatistical and the holistic ones, and present what I take to be the main kind of reasoning by which we could assess these theories.

#### 2. On the value of health

Health is now considered to be one of our most important values. Many people, in particular in modern times, have regarded health as one of the most precious values in life. Health, as well as longevity, should, they think, be protected and enhanced as much as possible. Thus, the art and science of medicine has received a crucial place in the modern, both Western and Eastern, society. The doctors and other health workers are important people. They are highly regarded and they are well paid in most countries. In certain circles they have replaced the priests or even the gods of old times.

We can also see the rapid development of the movement of health promotion which is partly but not wholly connected to the development of medicine. Health promoters of various kinds play roles as advisors and supporters to many modern people. And the commercial industry has followed in these steps. Huge amounts of goods which purport to be beneficial for one's health have been marketed and successfully put up for sale.

This situation has not always been prevalent. During the medieval times in Western Europe the life on earth was not the important life. This life was only a preparation for the eternal life together with God. Thus, health in this life could not have the utmost value. It was much more important to successfully prepare oneself for the eternal life and thus live in accordance with the duties indicated in the holy literature, in particular the Bible.

Moreover, most philosophers of life in the Western culture have preached other virtues than the healthy life. The great Plato from the fourth century BC<sup>1</sup>, for instance, said that we should not concentrate our interest and ambition on our own

<sup>&</sup>lt;sup>1</sup> See Plato: 1998, *The Republic*, in J.M. Cooper (ed.) *Complete Works*. Indianapolis: Hackett Publishing Company.

health and on questions on health and disease. When people concentrate on their own health and want to consult a doctor at all times this is a sign of unsound conditions in the state. Neither should doctors be given power over people. People should never leave the responsibility for their lives in the hands of other people.

Today, however, we find in most Western countries a great attention to health matters. In my own country, Sweden, several investigations have been made about this phenomenon. The best known studies have been performed by the Swedish professor of religious philosophy, Anders Jeffner<sup>2</sup>. In his studies Jeffner asked a representative sample of Swedes the question which are the highest values in their lives. A vast majority of these people put health on top of their lists, which also contained values such as wealth, to take part in cultural activities, a high social status, a good famly relation and a world in peace!

Is there a good explanation of this phenomenon? Indeed, I think there is a good such explanation. Sweden is probably the most secular country in the world, even in comparison with the post-communist states, where atheism was officially preached. It is rare that Swedes expect a life after death. Thus, practically all their attention is focused on the problems of the life on earth and on having the best conditions to live this life. Health is, not unexpectedly, believed to be such a condition. Moreover, one must remember that it is only during the last century, because of the development of medicine and health promotion, that it has become possible to make radical improvements in the health status of people. Hygienic conditions in the rich counries are now such that one can mostly guarantee a reasonably healthy life to their inhabitants. It has also become possible to cure or prevent some of the most deadly diseases, such as smallpox and tuberculosis. Thus, it is only recently that it has become possible to really hope for a radical improvement of the health states of people in the world.

The purpose of this paper is, however, not to discuss the sociology of today's health interest. I wish instead to contribute to the understanding of the nature of health,

<sup>&</sup>lt;sup>2</sup> Jeffner's results are summarized in Kallenberg K., Bråkenhielm C.R. and Larsson G.: 1997, *Tro och värderingar i 90-talets Sverige*. Örebro: Libris.

which is the area where I have done most of my research. I shall do this mainly by comparing two kinds of philosophy of health which are dominant in the modern discussion. I shall argue in favour of one of these, viz. a holistic understanding of health. It will be evident, I think, that this understanding is the more adequate one, also in the light of what I have said about people's appreciation of health. Let me however first provide a more general sketch of the philosophy of health.

#### 3. Some historical theories of health

The varieties of health

Health, thus, is a notion primarily applicable to a human being as a whole. On the other hand, there are more specific derivative notions. Ever since antiquity, and reinforced by the Cartesian distinction between body and mind, it has been natural to separate somatic health from mental health. The interpretations of mental health have varied over time. The ancient notion of mental health was closely connected to morality, whereby the mentally healthy person was a person who lived a virtuous life, but this idea has lost most, though not all, of its significance today. The idea of spiritual health is also current in the health science although it is not systematically recognized. Bernhard Häring is a leading spokesman for a notion of health including a spiritual dimension: "A comprehensive understanding of human health includes the greatest possible harmony of all of man's forces and energies, the greatest possible spiritualization of man's bodily aspect and the finest embodiment of the spiritual". <sup>3</sup>

The various categories of health have connections to each other. Sometimes bodily health has been given priority in the sense that it has been viewed as a prerequisite for mental health. Galen (ca. 129-216/17) in some of his writings attempted to explain mental properties of the person in terms of specific mixtures of the bodily

<sup>&</sup>lt;sup>3</sup> See Häring B.: 1987, *Medical Ethics*. Middlegreen, Slough: S.t Paul Publications, p. 154.

parts.<sup>4</sup> Consider also the ancient proverb: *mens sana in corpore sano* (a healthy mind in a healthy body). In the modern discussion about mental illness, one position, favoured in particular by medical doctors, is that all mental illness has a somatic background, i.e., that all mental illnesses — if they exist at all — are basically somatic diseases. The customary view, however, also in Western medicine, is that a person can at the same time be somatically healthy and mentally ill, or vice versa.

## Health as balance

An extremely powerful idea in the history of medicine is the one that health is constituted by bodily and mental balance. The healthy person is a person in balance, normally meaning that different parts and different functions of the human body and mind interlock harmoniously and keep each other in check. The Hippocratic and Galenic schools (Hippocrates 460–380 BD and Galen 129-216/17 AD) were the first Western schools to develop this idea in a sophisticated way. They stated that a healthy body is one where the primary properties (wet, dry, cold, hot) of the body balance each other. In the medieval schools, following Galen, this idea was popularized and formulated in terms of a balance between the four bodily humors: blood, phlegm, yellow bile, and black bile.

The idea of balance is strong in several non-Western medical traditions. The Yahurveda tradition in India, for instance, declares that there are three humors acting in the body, the breath (*vata*), the bile (*pitta*), and the phlegm (*kapha*). The proportions of the three humours vary from person to person, and their actions vary according to the season, the environment, the life-style of the individual, and his or her diet. In good health the humors are in equilibrium. Disease is the result of their imbalance.<sup>5</sup>

<sup>&</sup>lt;sup>4</sup> See Galen: 1997, *Selected Works*, translated with an introduction and notes by P.N.Singer. Oxford: Oxford University Press.

<sup>&</sup>lt;sup>5</sup> See Singhal G.D. and Patterson T.J.S.: 1993, *Synopsis of Ayurveda*, based on a translation of the Treatise of Susruta. Delhi and Oxford: Oxford University Press.

Balance is a powerful idea also in modern Western thought, in particular within physiology. The idea is then often to be recognized under the label of *homeostasis* (the Greek word for balance). Walter Cannon's (1871-1945) classical work on *homeostasis*<sup>6</sup> describes in detail how the various physiological functions of the body control each other and interact in feedback loops in order to prevent major disturbances.

The idea of balance or *equilibrium* (the Latin word for balance) has a rather different interpretation in the writings of Ingmar Pörn. Here balance is a concept pertaining to the relationship between a person's abilities and his or her goals. The healthy person, according to Pörn, is the person who can realize his or her goals and thus retain a balance between abilities and goals<sup>7</sup>. (See health as ability, below.)

## Health as well-being

It is an important aspect of health that the body and mind are well, both in order and function. But we may ask for the criteria of such well-functioning. How do we know that the body and mind function well? When is the body in balance?

A traditional answer is that the person's subjective well-being is the ultimate criterion. Simply put: when a person feels well, then he or she is healthy. This statement certainly entails problems, since a person can feel well and still have a serious disease in its initial stage. The general idea can, however, be modified to cover this case too. The individual with a serious disease will sooner or later have negative experiences such as pain, fatigue, or anguish. Thus, the ultimate criterion of a person's health is his or her present or future well-being.

<sup>&</sup>lt;sup>6</sup> See Cannon W.B.: 1932, *The Wisdom of the Body*. New York: Norton.

<sup>&</sup>lt;sup>7</sup> See Pörn,I.: 1993, Health and Adaptedness, *Theoretical Medicine*, 14, 295-304.

It is a difficult task to characterize the well-being constituting health. If one includes too much in the concept there is a risk of identifying health with happiness. It is, indeed, a common accusation directed against the famous WHO definition of health that it falls into this trap. Health cannot reasonably be identical with complete physical, mental, and social well-being, many critics say. The absurd conclusion of this conception could be that all people who are not completely successful in life would be deemed unhealthy.

Some authors (for instance Hans-Georg Gadamer<sup>9</sup>) have pointed out that phenomenological health (or health as experienced) tends to remain as a forgotten background. Health is in daily life hardly recognized at all by its subjects. People are reminded of their previous health first when it is being disrupted, when they experience the pain, nausea, or anguish of illness. Health is "felt" only under special circumstances, the major instance being after periods of illness when the person experiences relief in contrast to the previous suffering.

Thus, although well-being or absence of ill-being is an important trait in health, most modern positive characterizations of health have focused on other traits. One such trait is health as a condition for action, i.e., ability. I will return to this idea when I discuss holistic theories of health below.

<sup>&</sup>lt;sup>8</sup> The WHO definition of health was formulated at the start of WHO's constitution, which was adopted on 22 July 1946. It reads as follows: "Health is a state of complete physical, mental and social well-being and not merely ther absence of disease and infirmity", *Official Records of the World Health Organization*, 2 (1948, p. 100), Geneva.

<sup>&</sup>lt;sup>9</sup> Gadamer H-G.: 1993, *Über die Verborgenheit der Gesundheit*. Frankfurt am Main: Suhrkamp Verlag.

## 4. Two contemporary streams of philosophy of health and disease

As I said, two main streams of theories of health and disease have recently appeared in the arena. One main stream is sometimes called the medical one, or the biostatistical one. What is typical of philosophers within this stream is that they claim that the concepts of health and disease and their allies – there is a whole network of medical concepts including illness, injury, impairment, defect, disability and handicap are, or can be treated as, biological, or in certain cases psychological, concepts. "Health" and "disease" are biological concepts in the same sense as "heart" and "lung" and "blood-pressure" are biological concepts. In particular, there is, according to this position, nothing evaluative or subjective about the concepts of health and disease.

The other main stream in the philosophy of health involves a completely opposite position regarding these basic matters. According to these philosophers, who are often called normativists or holists, health and disease are intrinsically value-laden concepts. They cannot be totally defined in biological or psychological terms, if these terms are supposed to be value-neutral. To say that somebody is healthy partly *means* that this person is in a good state of body or mind, the holist claims. And to say that somebody has attracted a disease is to say that this person has attracted something which is bad for him or her.

What I have done so far is just to give a superficial and rough demarcation of two lines of thought within this subject. It is very complicated to spell out and disentangle the different versions of these lines of thought. At least on the holistic side there are a number of versions. What I shall do here is rather to simplify matters and concentrate on a specific version of each line of thought and analyse them in more detail.

The choice of theory on the biological side is very easy. The articles by the American Christopher Boorse have been completely dominant in the arena. They have also been the target of most of the normative counterclaims. In presenting Boorse's theory I shall use the most recent formulations made by Boorse himself in his long defensive article, published in 1997, called *A Rebuttal on Health*. <sup>10</sup>

The aim of Boorse's biostatistical theory of disease (*BST*) is to analyse the normal-pathological distinction. In order to capture the modern Western concept of disease Boorse proposes an explication of the ancient idea that the normal is the same as the natural in saying that health is conformity to species design. In modern terms, Boorse says "species design is the internal functional organization typical of species members, viz.: the interlocking hierarchy of functional processes, at every level from organelle to cell to tissue to organ to gross behavior, by which organisms of a given species maintain and renew their life". All conditions which are called pathological by ordinary medicine are disrupted part-functions at some level of this hierarchy, he says.

With this general description as a background Boorse presents the following definitions.

- "1. The *reference class* is a natural class of organisms of uniform functional design; specifically, an age group of a sex of a species, such as the human being.
- 2. A *normal function* of a part or process within members of the reference class is a statistically typical contribution by it to their individual survival and reproduction.
- 3. A *disease* is a type of internal state which is either an impairment of normal functional ability, i.e. a reduction of one or more functional abilities below typical efficiency, or a limitation on functional ability caused by environmental agents.

<sup>&</sup>lt;sup>10</sup> See Boorse C.:1997, A Rebuttal on Health. In: Humber J. and Almeder R., (eds.) *What is Disease? Biomedical Ethics Reviews.* Totowa, NJ: Humana Press, pp. 1-134.

<sup>&</sup>lt;sup>11</sup> Ibid. p. 7.

# 4. *Health* is the absence of disease". 12

An action-theoretic theory of health and disease.

Some of the theories on the holistic side also focus on goals, but they do so in a very different way. They do not refer to biological goals but to goals in the ordinary human sense, viz. goals of intentional actions. When we intend to do something or achieve something we automatically intend to achieve a goal. Such a goal is not a goal of just a particular organ. It is a goal of the whole human being. Thus, these theories ar often called holistic theories.

It is significant that the holistic theories (or the HTH as I shall call them with a general term) consider the concept of health to be the primary one and disease as a secondary concept. Health has its basis on the level of the whole person. It is the person, not the individual organs, who is healthy. Let me put this general idea of health in the old way once expressed by Galen, the famous Roman physician and philosopher from 200 AD: *Health is a state in which we neither suffer pain nor are hindered from the functions of daily life.* <sup>13</sup> Let me then introduce my own specification of this general idea: A person *A* is completely healthy, if and only if, *A* is in a mental and bodily state, given standard circumstances, which is such that *A* has the second-order ability to realize all his or her vital goals, i.e. the states of affairs which are necessary and together sufficient for *A*'s minimal happiness in the long run. <sup>14</sup>

<sup>&</sup>lt;sup>12</sup> Ibid. p. 7-8.

<sup>&</sup>lt;sup>13</sup> See this translation from Galen in Temkin O.: 1963, The Scientific Approach to Disease, in A.C. Crombie (ed.) *Scientific Change: Historical Studies in the Intellectual, Social and Technical Conditions for Scientific Discovery and Technical Invention from Antiquity to the Present.* New York: Basic Books, p. 637.

<sup>&</sup>lt;sup>14</sup> For full explications of this definition see Nordenfelt L.: 2000, *Action, Ability and Health: Essays in the Philosophy of Action and Welfare*. Dordrecht: Kluwer

According to the HTH a person is to some extent ill when he or she does not fully possess such ability. A state of illness can have various causes within the person's body or mind. Such causes of ill health as are common or typical are what we designate as diseases. Thus, diseases, according to the HTH, are such bodily and mental states of affairs as tend to lead to their bearer's ill health.

Two kinds of phenomena have a central place in traditional holistic accounts of health and illness. First, a certain kind of feeling, of ease or well-being in the case of health, and of pain or suffering in the case of illness; second the phenomenon of ability or disability, the former an indication of health, the latter of illness. These two kinds of phenomena are in many ways interconnected. There is first an empirical, causal connection. A feeling of ease or well-being contributes causally to the ability of its bearer. A feeling of pain or suffering may directly cause some degree of disability. Conversely, a subject's perception of her ability or disability greatly influences her emotional state.

In my own analysis I make an assumption of a strong connection between suffering and disability, where suffering is taken to be a highly general concept covering both physical pain and mental distress. A person cannot experience great suffering without evincing some degree of disability. But the converse relation does not always hold: a person may have a disability, and even be disabled in several respects, without suffering. There are, for instance, paradigm cases of ill health where suffering is absent. One obvious case is that of coma, when a person does not feel anything at all. Another concerns certain mental disabilities and illnesses. In general, when a patient cannot reflect properly on her own situation, then her disabilities need not have suffering as a consequence. In short, therefore, wherever there is great suffering there is disability, but the converse is not true.

Academic Publishers, 2000, and Nordenfelt L. 2001, *Health, Science and Ordinary Language*. Amsterdam: Rodopi.

These observations indicate that the concept of disability must have a more central place in the *defining* characterization of ill health than the corresponding concept of suffering. If one of these notions is essential to the concept of ill health it must be disability. This conclusion does not deny the extreme importance of pain and suffering — as experiences and not just as causes of disability — in most instances of ill health.

#### 5. Towards an assessment of the BST and the HTH

Consider now the two theories which we are going to compare.

I. *The BST*. A is completely healthy, if and only if, all organs of A function normally, i.e. make their species-typical contribution to the survival of the individual and the species, given a statistically normal environment. A disease is a subnormal functioning of a bodily or mental part of the human being.

II. *The HTH*. A is completely healthy, if and only if, A is in a bodily and mental state which is such that A is able to achieve all his or her vital goals, given standard circumstances. A disease is a bodily or mental process which tends to reduce the health (as holistically understood) of the human being.

What are the criteria for assessing concepts of health, illness and disease? By what standards can we say that either of the two theories is superior to the other?

There are several possible criteria for assessing the concepts. I can here only choose two, but I think important, criteria: usefulness in medical practice and usefulness in public health contexts. Let me then first consider the *medical encounter*, the encounter between a potential patient and a medical carer (a doctor, a nurse or a paramedic). In order to do this I shall tell a short story.

1. A person approaches health care with a problem. John approaches his family doctor with a problem. He says that he has been ill for some time. He has had considerable pain in his stomach and this has prevented him from going to work for

a week. He says that he must have some disease. He cannot explain his ill health otherwise. Here we see that John asserts that he is ill. He has not made any inspection of his body in order to establish this fact. He has noticed his pain (a pain which has no immediate external cause) and he observes that he is prevented from going to work. He assumes that there is a disease which is responsible for this problem.

- 2. The doctor diagnoses the problem and treats the patient. The doctor makes an examination of John. He tries to assess the nature of the problem and when he is convinced about its nature, he seeks the causes of it. Given his medical training he will in the first instance try to find the causes of the problem in the organic functioning of John's body. In short, he seeks some disease. It is however important here to see that he is not seeking a disease for its own sake. He is not seeking any old malady. He wants to find the cause of the patient's problem, primarily in terms of the disease language to be found in medical classifications and textbooks. Having found a disease that he believes to be the cause of the problem he starts treating it lege artis, i.e. according to the recommendations of the contemporary art of medicine.
- 3. The patient is healthy again when he or she has got rid of the problem. The medical encounter is considered successful, in particular by John, when he no longer feels the pain in the stomach and can go to work as usual.

This simple exposition of the typical successful medical encounter indicates to me that the health concept used is a variant of the HTH. The establishment of the fact that John is ill, in the first place, does not presuppose any internal inspection on the organ level. John can himself (at least equally as well as the doctor) determine that he is in a state of ill health. Ill health for John is when he is in pain and unable to do something urgent for him, viz. go to work, given that the circumstances are standard, i.e. not in themselves directly preventative.

Second, it is clear that health as assumed by the patient, as well as by the health care personnel, is a state of affairs *over and above the absence of disease*. Health has not

been restored just because a disease has been cured. Normally, the patient is not completely healthy, i.e. he cannot go to work, until after a time of recovery and rehabilitation. This also speaks in favour of the HTH interpretation of health...

Consider now an example taken from the field of general health promotion. There are nowadays many health-promotive campaigns in all countries which concern things such as healthy eating, physical exercise, moderate consumption of alcohol and abstention from smoking. How should such programmes be characterized according to the two models? And are both equally successful in such a characterization? Let us call this *the case of general health-promotive programmes*.

The answer to the question which model fits this situation better is certainly dependent on how the situation is interpreted. A protagonist of the HTH would say that this case clearly speaks in favour of the HTH.. General health promotion, they would say, has not primarily to do with the prevention of disease. The primary aim is that the subject should feel hale and hearty and in general be able to achieve the things he or she is aiming for. This goal certainly presupposes the prevention of all serious diseases. It need not, however, presuppose the prevention of all pathology. Being fit and able is clearly compatible with the presence of many trivial diseases.

A defender of the BST, on the other hand, would perhaps argue along the following lines: It may be true that a general health-promotive programme need not have identified a particular disease or range of diseases as its target. From this does not follow, however, that the goal is not to prevent the incidence of serious disease. In the case where abstention from smoke or alcohol is at issue it is clear that there are some salient diseases that the promoters have in mind. Cardiac and respiratory diseases, as well as a number of cancers, are in focus in the case of smoking.

Neurological diseases, liver cirrhosis, and indeed physical accidents are in focus in the case of grave alcohol abuse. If they aim for something more they are, one could argue, also some other kind of program, for instance, a "fitness programme", which should be held logically separate from the health promotion proper.

My answer to this, in favour of the HTH, is the following. It seems very artificial and implausible to say that broad health-promotive programmes, with their very general recommendations concerning people's lifestyle, are aiming at disease prevention and nothing more. To say that the remaining part of the programme is logically unrelated to health seems to be a purely theoretical stipulation against the ordinary use of language. To adopt the BST as being the most adequate theory in the case of general health promotion would, I think, be to legislate against ordinary language.

This then completes my brief argument in favour of the holistic theory of health.

## 6. On the relation between health and happiness

An important question remains to be answered. What is the relation between health and happiness given a holistic theory? If health has to do with the realization of a person's vital goals then it seems as if health comes quite close to happiness. And is this a sign that something is wrong with the holistic theory?

Before answering this question we may notice that there exists a celebrated definition of health which comes even closer to identifying health with happiness. This is the definition of WHO, which says that: "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." This definition characterizes an ideal state of a human being, and a state which is almost never reached by any human in the world. It is a utopian definition, which could hardly be used in the context of ordinary health care. It is also highly debatable whether it is at all adequate to capture the notion of health.

My own attitude to conceptual analysis is that notions which are held apart in ordinary language should also be held apart in a philosophical reconstruction of these concepts. And according to ordinary understanding health and happiness are different. A healthy man can be unhappy, for instance because of financial difficulties or because of the loss of a loved one. And an unhealthy person can be

-

<sup>&</sup>lt;sup>15</sup> See footnote 8.

very happy. One can easily imagine even a dying person who is happy in the presence of her family and in the firm conviction that she is soon going to meet her God.

But is there then a conceptual relation at all between health and happiness in my view? Yes, there is and I think that this is also in accordance with the ordinary understanding. It is evident that health is normally conducive to happiness. If one has the capabilities involved in health, if one can do most of the things one wants to do, then it is quite likely that one is happy with life. Conversely, if one is disabled and is in pain, then most probably one is quite unhappy. This all follows from standard definitions of happiness where happiness is understood as an emotion due to one's recognition that the conditions in life are as one would like them to be.

I do not only think that this holds as a matter of empirical fact. I also think that one should *define* health as a state of affairs which tends to lead to a certain degree of happiness. This is also what I do in my more technical characterization to be found, for instance in the book *Health, Science and Ordinary Language*. <sup>16</sup>

## 7. Conclusion

In this paper I have set out to discuss a set of topics related to our understanding of health. I have noticed the great interest dedicated to health by a majority of Westerners of today and tried to formulate an explanation of this fact in terms of the strong secular movement in the modern world but also in terms of the medical development. After my historical introduction I formulated two major competing conceptions of health and related concepts. I have tried to compare a biostatistical theory of health and disease with a holistic one. I have noticed the essential differences and similarities between the two approaches. I have also initiated an assessment of the two conceptions, mainly from the point of view of medical practice and public health. My conclusions from this preliminary assessment are the following:

<sup>&</sup>lt;sup>16</sup> See footnote 14.

- a. The health concept used in clinical practice is related to vital goals and not just to survival. Moreover, health is something over and above the absence of disease (also when the concept of disease is interpreted in the holistic sense.)
- b. The health concept used in the context of general health promotion is, I argue, much more naturally interpreted along the holistic lines than along the biostatistical lines.

Finally, I have commented on the relation between the notions of health and happiness. I have argued for the case that these notions are separate, but still related to each other. Health is in my view a typical, but indeed not necessary, contributor to happiness.