

Laureation as a Doctor Honoris Causa

## A reflection on health<sup>[\*]</sup>



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### Abstract:

The concept of health has constantly evolved over time and has changed from being a definition that only took into account the absence of illness to a global view of the individual, from the physical, mental and, even, social perspectives. The differences in health in the western and third worlds are self-evident and can easily be seen in the rates of infant mortality or life expectancy. The conditions people live in, the level of schooling and the degree of development are the main factors that affect a population's morbidity and mortality. Despite the fact that medicine has seen some amazing achievements and that the traditional infections have been practically eradicated in the developed world, new afflictions have appeared, such as new infections, degenerative diseases or obesity, brought on by the so-called risk factors, which are directly related to the habits of our society (sedentary lifestyles, drug use, etc.). In the future, the increase in mortality rates deriving from these risk factors, the ageing population and the consequences of the current process of globalisation, point to a less than encouraging scene.

## 1. On the concept of health

As a subject to be dealt with in this solemn act, I felt it was apt to look at health. This essential possession, the value of which is noted especially when one is without it, is not easy to define, as we will see. However, with your permission, I will attempt to reflect out loud on the concept of health, the current state of the health of the population and the perspectives for the future.

The great number of definitions proposed for the word *health* show the difficulty in gaining a general consensus and, likewise, highlight the relative nature of the concept. Equally, it is worth noting that, as time goes by, these definitions have seen their limits expanded.

Quite some years ago, the [World Health Organization](#) (WHO) proposed an extended definition: "Health is a state of complete mental, physical and social well-being and not merely the absence of disease or infirmity". Evidently this definition surpasses the strictly personal limits, in considering the

environment in which one lives. In terms of the same line of thought, we can also see the definition formulated by Jordi Gol for the 10th Congress of Catalan-speaking Medics and Biologists, held in Perpignan in 1976. At the time, health was defined as "that way of life that is independent, charitable and joyous". This personal and subjective aspect is even more important in Diego Gracia's definition, the president of Madrid's [Institute of Bioethics](#), according to whom health "is the ability to carry out the project for life that

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### SUMMARY

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one sets oneself" and, he adds, "health and life need to be defined more in terms of biography than biology. If I wanted to be a pilot, or run the hundred metres like Donovan Bailey, I would have to consider illness my short-sightedness or insufficient lung capacity. As I want to be a university professor, I believe myself to be a healthy person".

The bar for the definition is, thus, raised higher and higher, and we can come to think of it in the following terms, in the words of [Laín Entralgo](#): a healthy person is that whom has been insufficiently explored or who, I would add, not only feels well, but has all their possible problems resolved adequately.

This conceptual difficulty was seen shortly after the introduction in the United Kingdom, at the end of the second world war, of the [National Health Service](#). In effect, it was believed at the time that there was a limited number of illnesses and that, thus, the annual cost of health services would go down once effective action was able to reduce the rate of morbidity. This belief presupposed that the difference between health and illness was obvious: as an "ill" person became "healthy" the number of eventual patients would be reduced. This conceptual error has various explanations. Firstly, reality shows that there is no clear distinction between health and illness, given that, on trying to determine any form of parameter, it is practically impossible to set a fixed limit between that which is normal and that which is pathologic. Secondly, as we have just seen, feeling "well" or "ill" is a purely subjective judgement. And, there is still another very important reason: this indistinct barrier between health and illness has taken on another front, and, thus, problems such as alcoholism, depression, sexual deviation or, even, personal problems or difficult family relations are often considered to deserve treatment. Indeed, many mental or social problems that were seen as being personal problems, and which were often dealt with, and resolved, in the confessionary, have become the responsibility of the health services. In short, whilst sixty or seventy years ago morbidity could be considered to be a drop in a measurable ocean, nowadays, it is considered to be like a planet's atmosphere, with a density that decreases increasingly as it gets further from the central nucleus..., but with no clearly definable limit.

To this we have to add that, as shown by economic studies, the increase in the supply of health services automatically generates an increase in the demand and that the rise, otherwise much wanted, in the level of education of the population leads to an increase in the levels of demands from the user. The logical consequence is that the cost of the health services not only goes up, but that it starts on a spiral that is practically impossible to stop.

It is worth noting that the professional or purely mercantile economic interests of certain companies also contribute to the driving of this unstoppable evolution. For example, certain multinationals in the pharmaceutical industry have been accused, by a medical journal as prestigious as the [British Medical Journal](#), of disease mongering, i.e., of trafficking diseases so as to be able to promote certain drugs to combat illness that they have essentially made up.



## 2. What is the state of the population's health?

It is obvious that something that is as difficult to define as health, is even more difficult to quantify. Proof of this can be seen in that many of parameters used in this field are negative indicators, i.e., that they are not for health, but for "ill-health". And, in this way, when we wish to quantify the health of the population, we talk of morbidity or mortality and, more particularly, infant mortality (the proportion of infants that die before reaching a year); this last parameter offers an objective perspective of the state of health in a country. The main positive indicators, in turn, are based on the longevity of life, rather than its quality: life expectancy at birth or a determined age (sixty years old for example).

This data highlights the great historical and geographical differences that can be seen on reviewing the corresponding figures, such as infant mortality. In Catalonia, at the start of the 19th century around 300 infants of every thousand died before they reached one year; at the start of the 20th century (from the official data in the civil register), the figure had been reduced by half (exactly 150.8 per thousand), and in the year 2000, 3.4 died per thousand, a figure which is difficult to improve upon and that compares well with the results from the most highly developed countries. If we look at the figures for the less developed countries however, we can see that important differences still exist. In China, for example, infant mortality is still at 33 per thousand and the figure in other poorer countries can reach 60 or 80 per thousand.

Alongside this, significant differences can also be seen in terms of life expectancy at birth, which in Catalonia has gone from an average of 36.7 years in 1900 to almost 80 at the current time (in both cases with women outstripping men). Apart from Japan, there is no other place in the world with a longer life expectancy. Likewise, whilst virtually all the countries in the western world offer similar results, there are still substantial differences, differences that are directly proportional to the respective levels of income. In this way, many third world countries have an average life expectancy that struggles to reach 45 years.

The advances made in terms of health have contributed very positively to this notable improvement, seen above all in countries like our own, and is due, clearly, to the success in the fight against infections, the main cause of death, half a century ago, for infants and children. The so-called *epidemiologic transition*, i.e., the decrease in infections, that are substituted in the mortality ranking by degenerative diseases, predominant in more developed and older populations, came thanks to preventative and therapeutic measures that have been decisively effective. Likewise, there is no doubt that the improved quality of life and the progress in terms of education have been as or more important than the improvements in medical practice. In this way, it is worth highlighting that in a recent [study on world health](#) carried out by the WHO, in collaboration with the World Bank and the Harvard School of Public Health, it was found that the world can be divided into seven different regions in terms of their degree of development, bearing in mind the GDP, the level of schooling and the level of technology reached, key factors in terms of health.

It is also worth highlighting that the most developed countries still show signs of clear differences determined by the socio-cultural environment. The examples of the precarious nature of this fourth world living amongst us are many and demonstrative. In the United Kingdom, thirty years ago, infant mortality was proven to be around 11.5 per thousand amongst the more well-off, whilst reaching some 30 per thousand for the less fortunate. There are many studies that show that there still exist well-known differences among the regions here and elsewhere. And, without having to look further afield, data from Barcelona city council shows that there are notable differences amongst the city's different districts, coinciding with the level of literacy: the lower the level of education the greater the number of years of life expectancy lost.

As stated above, the success in terms of prevention and treatment of transmissible diseases, caused by parasites, bacteria, viruses or prions, has been the cause of this epidemiologic transition. Vigilance of drinking water, treatment of wastewater, increased personal hygiene, the introduction of vaccines and, subsequently, the discovery, in the last century, of truly effective antibiotics and chemotherapies made people think that infectious diseases could be overcome definitively.

Unfortunately this optimism has proven to be misplaced. Likewise, it should be recognised that there are countries in the third world with areas without drinking water, a fact that leads to a great number of infant diarrhoeas. According to WHO data, this leads to the death of some three million infants

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The introduction of vaccines has been one of the most effective weapons in the fight against infections. Thanks to vaccinations, smallpox has been eradicated from the world and polio, no longer existent in the western world, seems as though it could be completely dominated in the near future. Here, vaccination campaigns have eliminated measles and reduced spectacularly the number of cases of diphtheria, tetanus, whooping cough, rubella and mumps.

Another cause of the persistence of infections, around the world, is the appearance of resistance to many of the anti-infectious agents. At one time, it was possible to think in terms of the eradication of malaria, actually achieved in western countries, but it is still the cause of two million deaths each year. Another worldwide plague, tuberculosis, has yet to be controlled, despite the availability of effective medication. Some two million deaths a year are caused by this illness.

Aside from these infections that have been overcome, it is also worthwhile stating that, in the last twenty-five years, thirty new infections have been identified, some of which have led to significant problems. This is the case with, for example, legionnaire's disease, bovine spongiform encephalopathy (or mad cows' disease) and, in particular, acquired immune deficiency syndrome (or AIDS), which has become one of health's greatest problems. Since its identification at the start of the 1980s, AIDS, which comes from southern Africa, has spread around the world. In Catalonia, one of the worst affected areas in Europe, an increasing number of cases were diagnosed, reaching 1,575 in the year 1994. Given its high mortality rate, AIDS has become the leading cause of death amongst young people here. Fortunately, the discovery of effective medication, whilst unable to heal, has allowed for the progressive reduction of the morbidity and mortality (428 cases in 2001). However, this has been a very expensive process. The cost of these retroviral agents means that they cannot be used widely in third world countries. In sub-Saharan Africa, less than 1 percent of those infected can receive treatment and this means that the disease has caused forty million deaths around the world and it is estimated that three million people die of AIDS each year. This horrific example shows us that we cannot celebrate victory over infections and that the effectiveness of the fight against many of them requires economic and human resources that, unfortunately, are not within the reach of the majority of countries.

The other important area of pathology deals with non-infectious diseases, this is a heterogeneous group and is, as stated above, the main cause of death in developed countries. We must not forget, however, that malnutrition continues to be one of the great problems in the third world, where there are, according to the WHO, 170 million underweight children who are at a great risk of dying prematurely. As opposed to that, the WHO again shows that there are more than one billion people who are overweight in western countries, five-hundred thousand of whom die each year from complications deriving from their obesity.

In the so-called "opulent society", of which we form a part, the main health problems are currently degenerative diseases.

It is true that the *genetic factors* play an important part in the cause of many of these illnesses and, at the moment, we can do little to change this. However, in the majority of cases, the so-called *risk factors*, which depend on the behaviour of each of us, are very important in terms of the genesis of cardiovascular infections and a good number of cancers or malignant tumours. For this reason, in order to maintain a good state of health, one has to bear these risk factors in mind.

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As has been said many times before, the three Cs (sedentary, cancer and car), constitute constant risks that, to a great extent, can be avoided.

The negative influence that the sedentary lifestyle and excessive and unbalanced diets have had is well known as an obvious cause of obesity and hypertension, two of the main risk factors. The importance of drug abuse is clearly not valued sufficiently. The continual consumption of drugs is nothing new. All civilisations have had or have their habitual drugs. They are differentiated by the way they are considered in the different eras and places; whilst some are approved of and accepted, others are seen as being harmful and officially prohibited.

Alcohol and tobacco, accepted drugs here and now, constitute an obvious risk. They are the cause of many somatic and psychological pathological disorders, they lead to premature death in a great number of people and drastically increase the healthcare needed and the increasingly expensive costs this implies.

The pernicious effects of the abuse of alcoholic drinks are well known. Acute alcoholism is one of the main causes of road traffic accidents. Here, for example, despite the reduction in the limits set for drunk driving, five hundred people die each year in these kinds of accidents, many of whom are young, and this represents a significant and regrettable loss of years of life.

No less worrying is chronic alcoholism, which is all too common here in Catalonia. A considerable percentage of hospital admittance is related to the continual abuse of alcoholic drinks. The liver, nervous system and behaviour of alcoholics are affected greatly. And this brings with it not only a premature death, but also has an important effect on the quality of life for sufferers and those around them.

The pernicious effects of tobacco on health are extraordinarily wide-ranging. Gro Harlem Brundtland, director general of the WHO, has emphasised this subject particularly. This is an understandable attitude, when you take into account that, due to tobacco, more than three million people a year die, a figure that equates to twenty-six million years of life lost. In Catalonia, we are not spared from this plague: tobacco leads to the death of some nine thousand people a year (in other words, a sixth of the total number of deaths). As is well known, tobacco abuse is the main cause of lung cancer and other malignant tumours and many other respiratory and cardiovascular infections.

Campaigns against tobacco are, then, fully justified, despite their limited success. In Catalonia, when they began in 1983, 58 percent of the male population smoked and 20 percent of the female population. Twenty years later, tobacco use amongst men has dropped considerably (currently only 39% smoke), whilst in the case of women, use has increased significantly (from 20% it has gone up to 30%) and, thus, in terms of the total population, the reduction has been regrettably little, only going down from 38 percent to 34 percent.

As has been said many times before, tobacco is, by far, the leading health problem; a problem which could otherwise be easily avoided, if people stopped smoking. The large tobacco companies, which are increasingly spreading their advertising to underdeveloped countries, use all kinds of weapons to maintain and expand their business, despite the fatal consequences. The recent measures adopted in Europe against tobacco advertising and the limiting of its use in certain areas are fully justified, and we shall have to wait to see if they contribute to reducing this horrific loss of life.

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I believe that these examples clearly show that it is possible to successfully fight against the main causes of death in the most developed areas of the world, in the so-called opulent society. Indeed, both malignant tumours and cardiovascular infections can be treated successfully in many cases. However and above all, they can be avoided for the most part if we bear in mind the risk factors that bring them on (sedentary lifestyle, unbalanced diets, hypertension, drug abuse) and we take the necessary measures to deal with them. The achievements made in the prevention and fight against this large group of illnesses can be seen in the significant increase in the average life expectancy on reaching sixty years of age: whilst at the start of the 20th century, here in Catalonia, sixty-year old people would live on to an average of sixty-nine, nowadays the average stands at eighty-five.

It is true that aside from degenerative alterations and infections there are other causes of illness and, eventually, death for which medicine does not have many answers. There are congenital infections, for which little can be done, and accidents or traumas that can have any number of causes.



### 3. Looking to the future

In the current circumstances, what can be logically expected for the future? From my own point of view, I have to admit that I am not a great believer in predictions. In 1990, in the work *Le President*, F.O. Giesbert stated that: "In the 1930s, the US president Franklin D. Roosevelt set his administration the task of carrying out a wide-ranging study on future technologies. When the study was published, it made a great impact. It was indeed fascinating. There was only one problem: they had not foreseen the arrival of television, or plastic, or jet planes, or organ transplants, or lasers, not even the biro."

We have seen how, in the case of infections, the passage of time has not confirmed the promising forecasts of fifty years ago. However, it is true that unexpected advances may well be made. We can be sure that techniques will continue to progress and, in the specific field of biology, the recent discovery of the map of the genome and the starting of the study of the proteome may open up what were until now unimaginable horizons.

However, generally speaking, it has to be said, as has the Club of Rome, that it is difficult for advances to continue indefinitely. Any development has to be sustainable and, in terms of life, can also become a victim of its own success.

As has been stated above, the study sponsored by the WHO (in collaboration with the Harvard School of Public Health and the World Bank) forecasts the main causes of death and life expectancies for 2020 in the seven regions into which it divides the world, according to their corresponding levels of development. The conclusion is that the main causes of death will change completely. Whilst in 1990 the leading three causes of death were respiratory infections, diarrhoeas and perinatal complications, 2020 will see these replaced by coronary insufficiency (myocardial infarction), depression and road traffic accidents. Whilst life expectancy at birth is set to improve around the world, geographical differences will still be noticeable: with a maximum of 80 years in developed countries and a minimum of 55 years in less developed areas.

As Sans Sabrafen stated in a recent study, man has speculated that technology will be able to solve all health problems, given that illness and even death are the result of imperfections in the healthcare system. However, biology shows us that death is inevitable or, more to the point, that it forms a part of life.

It is not uncommon for the media to speculate on the possibility of significantly increasing human life. There have always been exceptional cases of survival and, obviously, nowadays there are many more people living to increasingly greater ages. However, statistics show that average life expectancy at 85 years of age, for example, is 6.1 years and this figure has not changed in the last twenty years.

In the excellent words of Sans, doctors now have to have the objective of "the reductive compression of the period of old age". Likewise, I would add, rather than providing more years of life, we now need to bring more life to the years.

The combination of the epidemiologic transition, mentioned above, and the demographic transition, i.e., the spectacular reduction in the birth and fertility rates, has led to a progressive ageing of the population. In Catalonia in 1900, 31 percent of the population was under 15 years old and only 4 percent was over 65 years old. However, nowadays, 13 percent are children, whilst senior citizens make up 18 percent of the population and, as we speak, the trend indicates that the proportion of the old is only set to increase.

In this radical change in the demographic pyramid, aside from the positive aspects, there are those that are not so positive. Among these other consequences, ageing brings with it serious economic problems and sets difficult bioethical questions to be resolved.

From an economic point of view, it seems self-evident that healthcare costs have to have limits, a fact that is difficult to tally with the significant and constant ageing of the population: it is evident that healthcare costs will increase proportionally with age. Likewise, one has to bear in mind social healthcare: between 65 and 74 years old, 5% of people require help in walking, whilst among those over 85 years old, 40% do. Very considerable investment will be required in this area.

No less important are the moral problems deriving from all the changes that have been mentioned. Caplan, the president of the [American Association of Bioethics](#), said recently: "Can we talk of a better future? Demographic trends and budgeting problems are not encouraging. The more lives we save and the more we extend their length, the worse the prospects for our descendants. If we continue in this way, what we will achieve is a great build up of doddering old people. We have to recognise that, up to this point, we have spent more time prolonging life than worrying about its quality."

We have the great fortune to form part of the western world where socio-political circumstances and the advances in healthcare have allowed for an enormous improvement in the population's state of health over the 20th century. We have to take care in maintaining this current situation, as, in my opinion, it would be difficult to improve upon.

And for this reason, moreover, we must not forget the less developed world. Firstly, obviously, in terms of the solidarity that has to be shown in areas, where, among other things, the state of health can clearly be improved upon. Likewise, from an egotistical point of view. Increasingly, as has been said many times before, the world is becoming a global village. If we are not alert, the poor health conditions that are seen in so many areas could well end up having a significant effect on us; AIDS is a good example.

I don't know if this reflection will have been of much use to you. In short, I wished to explain the scientific progress made in terms of health, and, in particular, the improvements in the level of education and socio-economic aspects, which are vital in staying healthy during a long life. If we wish to

aspects, which are vital in staying healthy during a long life. If we wish to enjoy this prized and fleeting possession that is health for many years, we have to take into account that it depends to a great extent on our own actions. Health is everyone's concern, as we have said, but, above all, our own.

Thank you very much for your time and attention.

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