



# Metaphors to Think about Technological Tools and Patients Care in Family Medicine

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Submission: 📅 October 28, 2017; Published: 📅 November 14, 2017

## Abstract

In an increasingly technical and technological context, although the scientific advances applied to health have increased the survival of the people and have improved the quality of life, it is becoming increasingly important to reflect through fantasy, which is the way which acts the sciences of the spirit. Thus, stories and metaphors can help us: In this context, a "clinical observation" is presented, from which several metaphors are discussed that may help to reflect on technology, especially at the level of family medicine. We expect high-tech solutions for commonsense problems, but some technological procedures offer reasonable doubts about its safety and effectiveness, and do not represent a competitive advantage. Technology comes to serve the purposes of doctors, but ultimately they redefine their own goals according to technology, which can lead to more problems than it solves, and gives the impression of giving immediate results and without uncertainty, which favors the perpetuate the nature of the technology itself and the human desire for power. Technology has favored that the humanitarian functions of medicine have become mere side effects of treatment, which in itself is understood in purely technical terms. However, family medicine is still a profession that refers to a patient, a pair of ears, a pair of eyes and a pair of hands. The doctor is his own technology when dealing with people and not with pathologies. Until we are able to develop an authentic human science, we will not be developing a technology for the understanding of the human condition.

**Keywords:** Family practice; Biomedical technologies; Health care technology; Health technology; Metaphors; Physician-patient relations; Humanism; Diagnostic techniques and procedure

## Introduction

Scientific advances applied to health have increased the survival of people and have improved the quality of life. We expect to live long, productive lives with replaceable joints, clear lenses, and revitalized hearts. We expect to receive a diagnosis and treatment for every complaint. We expect high-tech solutions for all problems, but health is a gift, as much depends on genetics and good luck as on lifestyle choices and access to care [1].

There is growing criticism of the limited possibilities of science and technology to contribute to health for themselves. This fact generates uncertainty in health professionals who have had a training based on this paradigm. The generalization of the experimental method widely used in physics, chemistry and biology has already evidenced its limits. In addition, today it is known that the disease is not only a biological imbalance that occurs inside the body and on which it can act alone, but there are a variety of risk factors, including psycho-social and environmental. Consequently, we are in a system, which based on diagnostic and therapeutic technologies, does not serve to respond to health problems.

New medical technologies, interventions, devices and drugs for chronic diseases are being developed and introduced with unprecedented speed. All this has a high cost. Medicine is one of the few areas of technical innovation, where new products are almost

always much more expensive, more sophisticated, more difficult to use and more likely to malfunction [2], but some technological procedures offer reasonable doubts about their efficacy, safety and effectiveness [3].

On the other hand, there is an epidemic of diagnoses and treatments. The prevalence of disease is growing rapidly in societies with high-tech medicine and not because it increases morbidity, which is in fact being reduced. The reason is that they are creating diseases. This epidemic of diagnoses and treatments threatens the health, and has two etiologies:

- 1) The medicalization of daily life [4]. Unpleasant physical or emotional sensations, and which were previously considered part of life, are now symptoms of diseases-such as insomnia, is now a sleep disorder, sadness is now depression, or restless legs syndrome, or sexual dysfunction, and if a child coughs after exercise, has asthma, if he has difficulty reading is dyslexic, if he is not happy enough, has bipolar disorder, etc, and

- 2) The bias towards early diagnosis. Asymptomatic people they are now pre-sick "at risk". Technological advances (laboratory tests, diagnostic procedures with fiber optics, computed tomography, magnetic resonance imaging, positron emission tomography, etc.) that reveal subtle structural alterations and,

for example, diagnose osteoarthritis of people without joint pain, infection with *Helicobacter Pylori* in people who do not suffer from discomfort digestive, and prostate cancer if you have high PSA. In addition, expert protocols constantly broaden the concept of disease and require fewer criteria than before to be diabetic, hypertensive, osteoporotic, hypercholesterolemic, or obese. But the true danger of the diagnostic epidemic is the epidemic of treatments, with drug uses in asymptomatic people, combined treatments, etc. This epidemic of diagnoses and treatments has many causes, but can be a economic benefits problem [5].

Further, there is a special problem of technology in family medicine. Primary care is not "primitive care"; on the contrary, as we ascend in the scale of specialization, problems become less complex, so the greater complexity of health problems is at the level of general medicine [6], but we must not confuse the high medical and technical knowledge (technological)-for example, on rare diseases or very specific treatments like chemotherapy-with the complexity of life (of the human condition). Technical mastery can be taught with time, knowledge of complexity is achieved through reflective experience [7].

The great failures of the application of science to human well-being have not occurred because of the lack of knowledge of the details of the structure or functioning of something, but, on the contrary, due to failure to examine the system in its complexity. Most patients do not demand perfection. Not cure. Not even relief. What we all desire is a plan that connects us to another human being-our doctor-which is a kind of relief all its own [1]. Patient-centered medical care and context (family and community), which is the own of general medicine, despite technology is still a profession that refers to a patient, a pair of ears, a pair of eyes and a pair of hands [8]. The doctor is his own technology when dealing with people and not only with pathologies. Molecular biology, genetics, and specialists can dazzle, but the future of medicine is not that of hospitals and factory-type outpatient clinics, with a whole arsenal of machines, but that of understanding and helping the suffering patient [9]. No one can question the importance of medical advances, but it is also undeniable that many doctors have given superlative importance to technical means while neglecting the human aspect of the sick man [10].

### Clinical Observation: An Example

In a clinical session at the Royal Academy of Postgraduates in London about a case of treatment-resistant adult celiac disease; the patient had been carefully studied with all kinds of biochemical and histological analyzes and radiographs. In the presentation of the case, the professor in charge of the case asked: "Why did the patient's intestine suffer a rapid deterioration, and remained so deteriorated that it led in a short time to the death of the subject?"

A general practitioner at the meeting said: "The case has been disconcerting to internists, biochemists, and pathologists. I would suggest that the main reason is the inadequacy of the concepts they use in their attempts to explain it. The worsening of the disease coincided with a period of increasing tension between the patient

and his adopted daughter. The final phase of the illness occurred at the same time as the collapse of his company, to whom he had devoted long years of loyal service, and the problems of his daughter's marriage that the patient considered disastrous, I think the patient died because everything that had made sense of his life had been pulverized.

After hearing this somewhat disconcerted, the professor went to one of the biochemists attending the clinical session to ask if he believed that peptidase insufficiency exerted any influence. Thus, all the participants relaxed and returned to tread the comfortable field of the Scientific Medicine, and instead of deepening in the psychosocial environment of the patient they preferred to deal with their enzymes.

### Discussion

In an increasingly technical and technological context, it becomes increasingly important to reflect through the sciences of spirit and art, and therefore through the fantasy that is the way in which the sciences of the spirit act [11,12]. So, several metaphors can help us in this topic.

#### The fountain of eternal youth

It is said that the Spanish explorer Juan Ponce de Leon heard about the fountain of youth to the natives of Puerto Rico when he conquered the island. Thus, he undertook an expedition in 1513 to locate her and discovered the present state of Florida, where he died while seeking the fountain of eternal youth, in a scientific mission entrusted personally by His Majesty Ferdinand II, who was obsessed with eliminating his facial wrinkles. Although Ponce de Leon was one of the first Europeans to reach the American continent, he never found the fountain [13].

The biomedical model and the technological emphasis affect the expectations and behaviors of the patient and the physician [14]. This model produces in society an expectation that implies the promise that the "fountain of eternal youth" is right here, if we find the keys to open certain gates of several diseases. But, at the same time, it has been estimated that the longevity expected in the population could extend only 1 year if the cure for cancer were discovered. Treating cancer with the latest drugs and techniques is costly and will not improve survival globally [15]. But, patients and doctors have adopted a belief system that has distorted medical judgment. What both the doctor and the patient think is "If something is broken, I will fix it" [16].

The assumption that the application of laboratory-based biomedical science and chemical technologies is a key route for improving health, whether this is via treatment or preventive interventions [17]. The technique shifts to reasoning; the diagnosis moves from the patient's head to the computer screen (and interprets it the machine) [18]. New technologies may carry profound implications for the experience of illness and the organization of care, as when new drugs reconstitute acute crises into chronic illness in the community.

## A ship at high speed but aimless

The health sector resembles a large ship whose crew demands great speed, but with little interest in the course followed. The emphasis on biomedical science has contributed to the loss of human understanding and dissatisfaction in the practice of medicine [8]. Until we are able to develop an authentic human science, we will not be developing the technology for a true understanding of the human condition.

Many doctors believe that all those who practice medicine should have high-tech devices; since patients and physicians want technology, it is hard to imagine a force that can break through its rate of diffusion. The scientific basis of clinical practice is often quite weak. In medicine, the search for new methods and techniques is often done without any method and depends on the interests and initiatives of doctors or organizations [19].

General medicine/family medicine will never achieve its goals without solving the problem of technology. There is evidence that technology is a problem at all medical level. Technology comes to serve the purposes of doctors, but ultimately they redefine their own goals according to technology. In principle, the realization of medical history and physical exploration are technologies (by extension of techniques). Thus, also the stethoscope, the ophthalmoscope, etc., are technologies.

## The ahab syndrome

But, technology can lead to more problems than it solves. Science increases the knowledge of the disease through the use of technology and promotes the development of more technologies, but reinforces the biomedical vision of the disease and promotes a vicious circle of more and more technology [20,21] nuclear magnetic resonance leads to more unnecessary lumbar surgery, etc. [22].

Employing one technology generally forces us to use another. The results of a technology often give rise to questions that seemingly can be answered only by other technology: the images of the CAT induce doubts that we can only apparently - solve with an NMR, etc. It is Captain Ahab's Syndrome, described by Herman Melville in his celebrated novel *Moby Dick*, where Captain Ahab is hired for his wholesome dedication to whaling, but his obsession to hunt the white whale with legendary ferocity endangers the own company [23,24]. In short, we tend to re-define the problems of a so that the technology seems adequate for its resolution, when that problem in its original expression could not be solved with technology [25-27].

## Ulysses syndrome

We are thus in a "test cascade" or Ulysses syndrome [28] that spent 10 years of misfortune and dangers, to get where it had left. In addition, technology gives the impression of giving immediate results and without uncertainty, which it favors the perpetuation of the nature of the technology itself and the human desire for power. Thus, the doctor before the suffering patient does not talk

about suffering, or about what he can do for the patient... no, the doctor is reading the results of the tests and the X-rays, which is often irrelevant to the more immediate complex problem of the patient who suffers, but gives the appearance of immediate and simple results. Neither patient nor doctor should expect the doctor to be a parent, or brother. Yet bedside manner, face-to-face time, and a sense of connection-the doctor-patient relationship-matter as much as the services that are delivered [1].

Drugs are also technology. There is a whole therapeutic culture of today's society, of faith in science and of hope in technology that leads doctors and patients to "expect" treatments that avoid illness, suffering and death [29]. But science and technology must be democratized. It is instructive to consider the example of AIDS. In medicine, humanitarian functions have become mere side effects of treatment, which in itself is understood in purely technical terms [30].

One of the phenomena of modern medicine is that while its advances have reduced mortality rates and to a certain extent those of morbidity, they have not affected or have increased medical consultation rates. There are many possible explanations for this phenomenon, but one area of interest is the finding that a number of modern drugs help little (or nothing).

Health care must return to primary care. It has been shown that increased use of specialists is not associated with better health and increases costs. It is best to keep the patient in primary care whenever possible. One can think that the challenge of health services is to treat pathologies one by one, but the problem is that users do not only have one illness, but several at the same time and people's health problems are not the same as their diseases. The strength of primary care is to see the patient as an integral combination, not as one of their isolated health problems. So, the discipline of family/general medicine represents the greatest intellectual challenge in the area of medicine. Why not take advantage of it and attract the most brilliant professionals? If we reflect seriously on the benefit and impact of its work, we will understand that primary care needs the best minds [31].

However, to return health care from the secondary level to primary care, it is necessary to modify the vision model of health problems. If we maintain the emphasis on biomedical assistance and technology, only secondary care-the hospital-is reinforced, since this is its model of work, not that of primary care. And it must be remembered that the general practitioner is not a "Frankenstein-type doll" made up of the other specialties (a little cardiologist, a neurologist, an urologist, an endocrinologist, etc.) [12,32].

## The syndrome of the eiffel tower

The Eiffel Tower is famous, not for its usefulness but for its symbolism of pride; is the reflection of the compulsion to raise powerful structures or grandiose towards the sky, but it is totally unnecessary [24,33].

It is rare for the physician to deny the impact of stress and emotional factors on the existence and course of physical illnesses,

but this knowledge does not apply to the reality of the consultation. The same applies to the influence of the doctor-patient relationship [34]. While physicians insist on the prevalence of somatizations in their consultations, they generally continue to prescribe drugs for physical complaints and using hard technology, as if these problems had an identifiable pathophysiological basis [4]. Medical training based on the biomedical model reinforces that professionals prefer physical explanations and are not receptive to the psychosocial factors of the disease. This biomedical approach tends to teach physicians to think of patients as “things with specific diseases” rather than as individuals with a high degree of biopsychosocial complexity.

There is a “technology imperative”; the technology seduces; biopsychosocial uses a “soft” or “diffuse” technology, and its research areas cannot with the spectacle of an MRI, or laser surgery, etc. The dangers of technology do not come from its complexity that can make it impervious to control, but from our values of acceptance of “technological imperatives” instead of preferring true human values [35]. And there is a lack of models for the idealization of biopsychosocial work since most physicians are trained in the traditional method of the medical model, and thus this aspect tends to be perpetuated. In addition, conventional training makes that after the faculty and 4 years of residence, the doctor is harder, colder and cynical.

### **You cannot eat soup with a fork**

The application of the new technologies of information and communication to the health world constitutes an extraordinary progress. Today we cannot continue to organize healthcare services without electronics to get closer to patients and manage the knowledge generated by the millions of acts of care that occur daily.

But, current models of electronic medical history for family medicine, in many places, culminate in a process of impoverishment and rigidity. In practice, the current format of electronic medical history favors impoverishment of thought, goes against the deepening of clinical reflection and concepts of family medicine, favors forgetting how crucial interpersonal communication is and the importance of narration and contexts, and bias the clinical diagnosis. It's like wanting to eat the soup with a fork: it's useless. The alternative must be an electronic medical history oriented humanistic, narrative, relational and flexible. The medical chronicles of the nineteenth and twentieth century is usually much more complete, livelier, and richer in their descriptions than modern ones.

Now, diseases are fragmented, and are no longer conceived as a whole. In studying the medical records of patients admitted to public hospitals during the twenties and thirties of the twentieth century, we find highly detailed clinical and phenomenological observations, often presented in the form of tales of richness and almost novelistic density (such as the classic descriptions by Kraepelin and other authors at the end of the nineteenth century). This meticulous and rich description of phenomena disappears, and is replaced by brief notes, or simple “clicks”, which do not offer

a real image of the patient, his world and his illness, but a mere list of diagnostic criteria. There is a disregard for specific cases (clinical histories). Freud himself wrote: “It still amazes me that the medical records I write are read as if they were stories.” According to the “dominant medical model” structured in current electronic medical history, thinking plays no role in diagnosis. Nor does it have much to do with feeling (what the patient feels, what he makes the doctor feel) [36].

### **The metaphor of the airplane pilot: technology assessment**

An aircraft pilot student was tested for official driver's license. The test consists of something simple: first he must take off, second he must keep the plane in the air, and third he must land. To obtain your grade the evaluation committee will assign a score of 1 to 7 to each of the three stages and then divide the result into three because each stage is considered equally important. It will be considered approved with a mark higher than 4. In the exam, the student takes off without problems. The commission qualifies the takeoff with a 10. In the second stage not only keeps the plane in the air but also performs three incredible pirouettes. The commission adds another 10. Finally, and at the moment of landing, the student loses control of the machine and crashes against the runway, escaping with luck of the airplane. After verifying that he was unharmed, the commission qualifies the landing with the minimum grade: 1. The commission meets to decide. Should they give this student the license to fly planes?

Researchers agree that whatever technology we use will change our brains. There is nothing surprising or sinister about it; we are what we are largely because of how our brain cells are connected in response to the environment and the things we do. If one changes the way these cells are connected, it will change the way we think [37]. While there has been an increasing interest in the question of patient benefit, and in particular the impact on people's quality of life, methodologies for measuring this phenomenon are still underdeveloped. Health technology assessment has predominantly been carried out by scientific and health policy experts, but the involvement of users is becoming increasingly important [38].

In the assessment of health technologies, misconceptions are frequently used, such as equating good medical technologies with sophisticated equipment. For the evaluation of the technologies it is necessary to establish its medical, ethical, economic and social impact. And technologies present problems of efficiency, effectiveness and equity. Evidence generated in the normative frame of health technology assessment is one-dimensional and medicalised knowledge that failed to respond to the contingencies of everyday practice in health and social care settings. So, clinical results of these “technological” services they will evidently suffer from lack of integrality and missing deep communication with patients. “Hard” medical technology does not represent a competitive advantage [39]. Since it has become commonplace, it no longer provides to the professional or the health care system with a competitive advantage. The technology is easy to copy and

has been standardized. It has become a commodity, a banality. The same happened with the railroad or the electricity or with the Internet.

## Conclusion

### Walking on two legs

The incorporation of technology into health systems has been quantitatively and qualitatively one of the most important events in recent decades, but health systems have not been adapted, or organized or reflected in this phenomenon. "Technology" has become a word with a swarm of different meanings, and it seems almost impossible to recover the correct use of the word in its original sense. But, it would be desirable to distinguish between "practice" and "science". Thus, we would be able to appreciate technology as a human activity and as part of life; we would consider it as involving not only rigorously precise machines, techniques and knowledge, but also organizational patterns and ambiguous values. Technology must refer to systems that include people and machines. Technology can get in the way of patient care. When we see the problems in their totality, instead of looking exclusively at the technical/technological detail, we can observe the psychosocial context that is linked to the disease. And if this context seems too complex, we can make the mistake of accept the view distorted by the technological imperative. Patients may wish the doctor to inform them of the treatment options for their problem, but also to have the decision in their own hands. People are faced with the disease but also with other problems in their context that also concern them, and they have to face all those problems simultaneously, while the technology of the expert is interested only by one of them. In order to satisfy human needs, both technology and the person are needed, and an active and continuous dialogue is necessary between both paths, without a single correct answer from each of these two points of view, but a variety of perspectives and a trajectory nonlinear [24].

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