



Science, technique and human body—rethinking the transplant in cardiothoracic surgery

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Abstract: The purpose of this short essay is to show the cultural framework in the practice of transplantation in cardiothoracic and in general surgery. Although cardiac and lung transplant surgery and also technology developed exponentially in the last decades, they are not the only factors that should be taken into account. More important is the role the Philosophy played in surgery and in its development. In fact, the modern history of western Philosophy has allowed the development of Technology and Science in contemporary and specifically cardiothoracic should be thought today in a larger and most interesting philosophical and anthropological perspective.

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Modern philosophy

One of the most important and significant periods of the millennial western history of the philosophical and scientific thinking is the Italian Renaissance which revolutionized the theological view reigning at that time. The Renaissance was the bearer of a new conception of the world, more secular and critical towards traditional instances. Scientists and intellectuals of that time developed a new critical awareness because they were not immediately satisfied by the old knowledge found in classical books. The way of personal experience and experimentation was the new way followed by a secular intelligence, emancipated from the weight of old, traditional and acritical authorities. The man of Renaissance directed his attention directly to nature.

The Renaissance played a key role in the history of Philosophy because it brought the human being to a central position in the universe making him capable to direct, guide and produce his destiny according to the well-known motto "Homo faber ipsius Fortunae" (1).

Two people were very important for the scientific revolution: Galilei and Descartes.

Galileo Galilei's work at the beginning of the 17th century

was capital: he proposed a new method (experimental method) and a new way to see and observe the cosmos according to mathematical laws (2).

René Descartes worked in the renewed scientific climate of Galilei's century. I'd like to recall Descartes's conception of the human body; for the first time it was intended like a machine (3). The Cartesian approach justifies our contemporary way to operate and treat the human body, like a machine able to work according to its own rules, hence the modern human physiology and surgery.

Destruction of totality

Transplant techniques developed starting from another philosophical decisive step: the destruction of a total conception of the world. If the world is not designed as a whole, then every part works for itself and not with reference to the rest.

It means that everything can be treated separated and separable.

Certainly, transplant techniques need necessary technical and surgical knowledge, but if they developed and could be applied, it is only because that in our culture we are

philosophically entitled to think bodies as machines and consider every entity as separable.

The postmodern Philosophy has made possible the development of Technique and Technology.

The Postmodern is the philosophical season which reacts to the implosion of the Hegelian system, a system which pretended to explain the world as a whole totality. This system had no forthcoming perspective and could not hold a candle to History and Change.

At the end of the 19th century, the German philosopher Friedrich Nietzsche reacted to Hegel's Philosophy supporting a radical destruction of every kind of cultural certainties on which the western notion of truth was based. After Nietzsche, it is not possible to regard the world as a whole totality (4).

Everything, every entity is now made available for the human being's handling and technical manipulation (5).

All this applies to transplant surgery; every organ is thought of as separable and in its mere function devoid of any symbolic, religious, psychological or anthropological significance.

It's possible to read under the following historical line the philosophical-technological development: (I) the Renaissance and the human domination over nature; (II) the notion of mechanized human body; (III) present impossibility to think the world as a whole system; (IV) everything is thought as a separable thing available for technical manipulation.

Recovering totality for human health—an anthropological approach

It's now necessary to weigh the pros and cons of the abovementioned notions. Although cardiac and lung transplant surgery and technology developed exponentially in the last decades since the 1960s, when the first transplants were performed by C. Barnard and B. Reitz (6,7), they are not the only factors that should be taken into account. Normally surgery is interested into clinical and merely organic problems and especially in transplant surgery: it's so fundamental that the recipient patient perfectly fits with the donor that, for example, Konheim and colleagues (8,9) proposed the use of a predictive equations for donor lung volumes which may facilitate donor-recipient size matching.

However, neither the organ nor the surgical operation are the main and last referents of surgical practice: it is the whole human being. A very good operation concerns not only technical aspects, but is in accordance with the patient's

mental, physical, and existential health.

The patient's reception of the organ must be accounted for. It's important to notice that even if surgical practice treats the organs as separable entities, the human being represents a unity of sense. It means that the human being is not only a thing among things, it's not only a body in hands of technical manipulation. The anthroposophy is essential for the elaboration of meanings and we all accept or refuse behaviors, actions, situations, etc., with reference to it.

From the very beginnings up to the present day, humans have drawn up spiritual and symbolic significance relating to different organs: in many cultures the heart represents the person itself or love. The breath and the respiration (lungs) relate to the human soul. The liver concerns emotions like wrath, anger, bitterness and courage [in Italian "avere fegato" (literally "to have liver") means "to have guts"] or was an instrument for divination (fortune-telling) at the time of Ancient Greece.

These are only few examples of a symbolic function and meaning of the organs.

Receiving a transplanted heart means more than receiving a single organ from a stranger. The French philosopher Jean Luc Nancy is wondering about the sense of identity, life, death, sense, individuality, strangeness in his book which refers to his heart transplantation. He problematizes the deep sense of transplantation, not only as a surgical experience but spiritual and philosophical too (10).

I personally think that the theme "transplantation", the symbolics of human organs and their different meanings are a very relevant problem today. Sometimes, especially in the age of postmodern, our technical possibilities are more developed than our conceptions on them. The great philosophical and moral problem today is that we humans can do and make more than we can really understand. The world and the scientific possibilities are changing and improving so quickly that is difficult to be aware in real time. Sometimes we are not able to predict the consequences of our acts.

School and education have a very meaningful role in our societies; they have to prepare scholars and persons to this problem. What's the meaning of transplantation for me? What's it for you? How is it possible to live together with an extraneous organ?

At the end of this short essay, we have reached two relevant conclusions:

- (I) the millennial history of culture shows that the possibility to operate in surgery depends on postmodern philosophy and on its way to treat

- organs as separable entities;
- (II) the topic «transplantation» concerns something which starts long before and ends long after the mere surgical operation. First of all, the practice of transplantation is an anthropological question and not a surgical theme. There's no surgeon who can work regardless of the cultural framework of an era in which he lives and on he depends.

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