# Taboo Transgressions in Transplantation Medicine

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# ABSTRACT

Organ transplantation is a logical development in the Vesalian Revolution, based on a reductionist, mechanistic view of human life. It requires a re-definition of death, blurring boundaries and violating long-standing cultural rituals and taboos. Psychological consequences, often ignored, can be profound.

### Is the Whole Greater than the Sum of Its Parts?

The Cartesian method of splitting a problem into a set of subproblems before the resulting fragments are reassembled into an integral whole enables the researcher better to grasp the problem's complexity. The method, however, comes with the huge caveat that it be applied only to problems that do not lose their quintessential properties in the process. As a research technique the method has proved useful above all in physics, from Newton to quantum physics, yet as soon as it is applied to living creatures it turns out to be woefully inadequate. The biochemist Friedrich Kramer puts the matter as follows: "The moment you take a living organism apart, you kill it; the dead organism is still accessible to anatomical probing, but you cannot use it any longer to study life as such. The preconditions for scientific biology or medicine are simply no longer there."<sup>1</sup>

Organ transplantation has been developed into a therapy on the basis of anatomical insights gained since the mid-19th century. As far as its methodology is concerned it represents precisely a taking apart of a living organism and its reduction to its component parts. Although the dissection is surgical and therapeutic in purpose, and preserves whole organs rather than taking them apart for study, in the minds of some it blurs the old boundary between cadaveric dissection and vivisection, in that the process of dying involves the sequential death of organ systems. The traditional criteria of death-absence of breathing and heartbeat, immobility, deathly pallor, decomposition, rigor mortis, and cadaveric lividity-have been superseded by the criteria of brain death. The hearts of the brain dead go on beating; their lungs, aided by life-support technology, continue to carry out their function in breathing; they digest and excrete. To all intents and purposes they look like other coma patients.<sup>2</sup>

# Anatomy as Anthropology—the Vesalian Revolution in the 16th Century

The foundational science of modern medicine is anatomy (from Old French "anatomie" from Greek "anatome" = dissection).

Modern medicine began in the  $16^{\text{th}}$  century with the newly introduced dissection of corpses, practiced in Europe until the  $18^{\text{th}}$  century almost exclusively on the cadavers of execution victims.<sup>3, pp 117ff</sup> Anatomy brought not only a new method to the study of nature; its triumph also went hand in hand with the obsolescence of the whole view of man's place within creation, which was imbued with magical thinking, and of the idea that man's cosmological anchoring in creation was unalterable. When perception switched from this to the human body as something that could be broken down into individual organs, which was the result of  $16^{\text{th}}$ -century medicine's insistence on dissection, a completely new paradigm emerged as regards worldview and the view of man's place in the world.

Anatomy encouraged the positing of the body as something that could be disassembled and reassembled at will according to mechanistic laws and that was completely detached from its environment and from the cosmos as a whole. Anatomy in the sense of a new doctrine of "man as body" (Michel Foucault) constitutes, as Marielene Putscher has pointed out, "also a set of anthropological propositions."<sup>4</sup> In keeping with this anthropological dimension, it was an anatomist, Magnus Hundt (1449-1519), who introduced the term "anthropology" into the body of Renaissance science in 1501, the year in which *Antropologium*, his anatomical-physiological opus magnum was first published.

The method of anatomy continues in today's research on life at all levels, from macroscopic to microscopic and submicroscopic: the disassembling and reassembling of organs in the living body down to embryos, cells, and genes. Quite rightly the Renaissance anatomist Andreas Vesalius (1514/15-1564) is considered the founding father of modern genetics: the decoding of the human genome started in 1543, the year of the publication of Vesalius's *De humani corporis fabrica libri septum (Seven Books on the Structure of the Human Body)*. In this work Vesalius laid the foundation of modern European medicine. He was the first anatomist to actually wield the dissection scalpel, the classic anatomical tool, himself. He dissected human corpses and living animals in the course of his research, and the Fabrica presents the systematic sum of his work. The triumph of the anatomical paradigm is consequently often referred to as the Vesalian Revolution.

A century later, René Descartes (1596-1650) fathered a principled mechanistic view of nature. He too was an enthusiastic anatomist. Against the backdrop of a radical body-soul dualism, he considered all animals to be soulless automata, with man as the only exception. In his 1632 treatise, *De Homine (Man)*, he described man as an articulated puppet governed by his mind. Muscle movements, the senses of touching, tasting, hearing, smelling, seeing; hunger and thirst; the different moods of the psyche; and waking and sleeping are all defined by Descartes as mechanical processes. The mind, which is located in the brain, ranks hierarchically above a soulless body. For

this dualism to be formulated, the anatomical representation of the human body as a corpse is a necessary precondition.

# The Concept of Brain Death

The anatomical-mechanistic view of humanity, stigmatized and defined by death, reaches a new climax with its concept of brain death, upon which transplantation has depended since the 1960s. It applies the logic of the Cartesian body machine to the process of dying. The brain is considered to be the all-important "locus" of the person and therefore also of his death, implying a disjunction between the brain (and its death) and the death of what is regarded as the "surviving bodily remains."<sup>5</sup> In this disjunction, those remains are viewed as alive. In some cases transplantation doctors classify a brain-dead patient ontologically as a "human vegetable," <sup>6, p 228</sup> as a "remaining body," or as a "heart-lung package."7, p 65 Death as an event is therefore equated with a single aspect and limited to a single organ, which negates not only death as a process in the biological sense, but also the dying of a person as a social event. Whereas, according to the philosopher Hans Jonas, before the days of modern brain death legislation the removal of organs was considered an act of vivisection, now the time of death and the point of time at which it is permissible to remove organs from the body of a brain-dead patient has been pushed back solely on the basis of a definition.<sup>6,p22</sup>

How flexible this definition of brain death is can be shown by the following: When Christiaan Barnard (1922-2002) carried out his first spectacular heart transplantation in South Africa in 1967, a Harvard commission established the criteria of brain death, which included absence of all kinds of reflexes, including those originating in the spinal cord,<sup>8</sup> a morphological extension of the brain. However, within the same year of 1968 the criterion was narrowed to refer to absence of cranial nerve reflexes. Brain-dead patients may have a number of elicitable reflexes that require only a functioning spinal cord.<sup>3,pp 284ff; 7,pp 69ff; 9</sup>

On the occasion of the Harvard report, Hans Jonas put forward the demand for the "strongest possible 'definition'" of death. He pointed out how the concept of brain death was inspired by a concept of humanity that was strictly within the framework of 17<sup>th</sup>-century Cartesianism and warned of the dangers of its vivisectionist consequences: "Who can claim to know whether at the moment the scalpel is beginning to do its work a non-cerebral, diffuse sensitivity that is still capable of suffering...is not being subjected to a shock, a final trauma? No decree, no definition can resolve that issue."<sup>6, p 222</sup> The new concept of death was also rejected by members of the medical profession, e.g. at the World Congress of Anaesthesiologists in 1968.<sup>10</sup> Werner Forßmann (1904-1979), the Düsseldorf professor of surgery and Nobel Prize winner, also stated his ethical objections in public. In his case it was his experiences as a medical doctor under the Nazis that added an extra dimension to his appeal:

Is an operation theater situation not utterly repulsive in which doctors apply a heart-lung machine to one patient while a second operating team, scalpels at the ready, surrounds a young woman who is struggling with death in her agony in an adjacent room, not in order to help her but keen to cannibalize her defenseless body? [...] Imagine how doctors will impatiently be waiting for accident victims, not in order to help and to cure them but to debase their bodies—and, by extension, their status as individuals—to the status of material.... Even worse is the prospect during politically unstable times.... Executions will then be carried out not by the executioner but in clinics, aseptically, as it were, by surgeon and anesthesiologist.... Here, in the last resort, the doctor is degraded to the role of an executioner, a Lucifer, a fallen angel.<sup>11</sup>

These ethical condemnations were followed by criticism of the brain death definition especially from the quarter of neurologists and neurosurgeons. For instance, Joachim Gerlach, a Würzburg professor of neurosurgery, objected to the equation of brain death and the personal death of a human being, as it "makes the brain the 'seat of the soul' in a scientifically inadmissible manner." The concept of the person is not, according to him, "applicable in a scientific context." Moreover, there are "no biological reasons for treating a part as the whole, as the existence of the whole presupposes the existence of all the parts."

Andreas Zieger, a neurologist and neurosurgeon, has also joined the ranks of those who are opposed to the hierarchic separation of the human being into mind (primary rank) and body (secondary rank). In his view the brain death concept draws on a concept of humanity that has been refuted by modern brain research itself. He writes that consciousness and reason, as well as emotions, do not reside within the premotor cortex, but rather are the product of a complex interplay of different regions of the body and of the brain.<sup>13</sup> The neurosurgeon and anesthesiologist Martin Klein has singled out for criticism the arbitrariness of the different models of death: "The definition of brain death is after all not a newly discovered law of nature but an arbitrary agreement."<sup>14, p 734</sup> What is symptomatic of this abstract concept of death in his view is the fact that at present we are simultaneously dealing with four different concepts of death: heart and circulation death, whole brain death, brainstem death (UK), and neocortical death.

Those who criticize the concept of brain death argue that the body and person of a human being form a whole that cannot be taken apart either by medical methods or in anthropological terms. Their view that brain-dead patients are not corpses but dying individuals is supported by the following facts: up to the moment when cardiac death occurs, brain-dead individuals are treated as patients according to the criteria of intensive care. They are routinely the subject of reanimation efforts to ward off cardiac death, which would imperil the salvage of vital organs. The majority of extirpations do not take place until the patient has been given drugs with analgesic or paralyzing effects. About 70 percent of organ donors react to being flushed with cold perfusion solution (4 °C, 39.2 °F) and to the highly invasive procedures of multi-organ extirpation using scalpel, saw, hammer, and chisel with movements (presumably from spinal reflexes) and a surge in pulse or blood pressure.<sup>15,16</sup>

# Taboo Transgressions in the Treatment of Donors

The practice of organ transplantation is unique in the history of medical taboo transgressions in that it dramatically impinges not only on several norms still valid in our culture but also on key obligations of medical ethics. In the course of the surgery involved in organ extirpation, there is not a single medical act that aims, as adjured in the Oath of Hippocrates, to further the well-being of the patient, once declared a brain-dead donor. On the contrary: all actions are for the benefit of prospective organ recipients. Yet donors are treated from the moment they are diagnosed as brain dead to the moment of their cardiac death—often medically induced on the operating table—like a living human being in that they are kept hydrated, tended, and given anesthesiological care. They look like patients in an intensive care bed. Transplantation experts refer to this stage as "donor conditioning" and, most recently, also as "organ preservation therapy."<sup>17</sup> Of course, this treatment is justified by the concept that brain-dead donors really are not persons but are corpses, actually as well as legally.

Brain-dead donors are not, however, treated with the respect accorded to corpses, which have traditionally been regarded with what Alexander Mitscherlich has called "holy awe."<sup>18</sup> Even in a medical setting this constitutes a barrier to cadaver dissection, which often triggers nausea, vomiting, or fainting fits in those who are sensitive to such sights. These instinctive reactions, which often must be overcome by ritual, may be seen as part of the "cult of the dead," which has great cultural significance. It has afforded protection to both the dead and the mourning survivors for thousands of years. It is only in the history of executions and of war that we come across ceremonies of dismemberment inflicted on dead enemies, which are intended as acts of humiliation and total annihilation.<sup>3,p,116</sup>

The removal of vital organs and then all other usable tissues, such as eyes, skin, trachea, or joints, does of course preserve rather than destroy the functionality of the various parts, and is not intended to dishonor or punish the donor. Nonetheless, it is not uncommon for the assistants in these procedures to feel overwhelmed by them. A nurse reported fits of nausea, when the joints of a donor were removed, saying that everything was simply cut open and removed, leaving only the outer covering of skin.<sup>7,p177</sup>

The brain-dead organ donor is excluded from the rituals of dying. No longer can friends and relatives be with him until his last breath. The ceremonies of attending and paying respect to a corpse cannot begin until after the organ donor has died a "second death."<sup>19</sup>

Before that time, the professionals—such as operating-room nurses and anesthesiologists—who participate in a procedure that is reminiscent of a vivisection<sup>20</sup> or a desecration of a corpse are exposed more commonly than is publicly admitted to a sense of having been complicit in a killing. "If the patient has been declared dead by an abstract definition," comments Günter Feuerstein, "yet is in fact still alive, the obvious moral failure consists in treating him as a corpse and thereby de facto to kill him."<sup>21</sup>

The moment when a brain-dead patient becomes a cardiac-dead corpse is often described as a traumatic event by nursing staff. This step is wholly due to medical intervention, and cardiac death takes place on the operating table as in a laboratory situation. An Austrian nurse anesthetist describes the atmosphere that forms on such an occasion as follows:

You always get a certain amount of tension in this situation. In the run-up to it, you are kept busy and give the patient medication; you've got your work cut out. And then all of a sudden the moment arrives in which the patient loses a huge amount of blood and you just stand there and watch the heart stop beating. For me this situation is dreadful. Sometimes I even leave.... You watch and the outcome is predictable. You see the signs of death appearing.<sup>7,p171</sup>

With this kind of experience at the back of her mind, an operating-room nurse who worked in a German transplant center found herself thinking, while viewing an exhibition on Nazi murders of hospital inmates, that one day she might find herself in the dock for complicity in medical crimes: "You cannot help thinking that if medicine continues to make such rapid progress and if what is legally acceptable today is no longer so in five or ten years—or the day after tomorrow: Have you killed all these people, have you been complicit in their killing?"<sup>7, p 176</sup> Operating-room nurses, anesthesiologists and nursing staff are particularly exposed to these kinds of qualms as, in contrast to the surgical teams who come and go, they are involved in the harvesting procedures for a much longer time, sometimes from beginning to end.

# **Psychological Reactions to Transplantation**

Transplantation medicine on the one hand spirits away the dying and the dead, on the other it makes them omnipresent by implanting them into the psychic life of many organ recipients. Magical thinking about the implanted organ, the idea that it partakes of the soul of the donor and the idea that the donor lives on in the recipient, is commonly reported by organ recipients. Mentioning this potential side effect in informational materials on transplantation is strictly taboo.<sup>22</sup> Yet organ recipients sometimes find themselves in great distress both physically and mentally because of their reaction to the fact that part of the body of a stranger has become part of their organism. A psychiatrist working in a heart transplantation center reports that such topics as robbery and murder dominate the psyche of patients immediately after the transplantation.<sup>7,p204</sup>

Susanne Krahe, a kidney recipient, has written a dialogue between herself and the new organ that is associated for her with the soul and the experience of its donor:

My pain, your pain. You shall never forget the violence that the gloved paws committed on me when they tore me from my habitat. You shall never get rid of the fear, of the desire for peace. My illness, your illness. I am your breath. I am your pain.... His sweat, my sweat. I was the last scream.... I took the sound of his dying heart with me from the end of the tube.... Dear unknown. Dear unfinished life. Dear dream that has become attached to me. Are the brain dead ever really dead?<sup>23</sup>

Feelings of guilt after transplantation often lead to marked religiosity, which is based on the desire to be reconciled to the donor. Many patients attempt to form a positive image of the donor. Not all transplant patients succeed in doing so.<sup>24</sup> As a consequence they are sometimes subject to destructive fantasies. Anxiety and a sense of obsession—the so-called doppelgänger fantasies—are experienced, as Oliver Decker has pointed out, "to a more or less marked degree by a majority of patients, in some cases even before the transplantation as such. This has been empirically established."<sup>25</sup> An American study on mental problems of heart transplant patients mentions the survivors' sense of guilt as a phenomenon familiar from the contexts of war or of the Holocaust.<sup>26</sup>

As an unintended side effect of the practice of transplantation medicine, fantasies of being possessed by the dead may be awakened in organ recipients. Items from the stock-in-trade of horror fiction thus make an unexpected debut in the genre of the transplantation thriller. As Thomas Macho has underlined, the state of being possessed belongs to the "most uncanny ideas that have ever been developed." It is "not a new horror but an age-old one." <sup>27</sup> That this phenomenon should also put in an appearance in transplantation medicine is the result, I would claim, of the destruction of death rituals and the cult of the dead implicit in the context of organ donation. It is also due to the integration of the transplanted flesh of a stranger, which is painfully at odds with what appears to be the greatest of all taboos, the one against cannibalism. It is deeply ironic that hi-tech medicine should have evolved a therapeutic method that evokes anthropophagic fantasies in its patients.

# Conclusions

Even though the act of dying has increasingly been shifted from the domestic, intra-familial stage to the hospital in the course of the 20<sup>th</sup> century and has thereby been given strong medical connotations,<sup>28</sup> and even though traditional death ceremonies have been upstaged as part of this development, modern culture has not really abandoned its metaphysical relationship to death. The way we treat a corpse according to religious rules and to rules that still contain elements of magic can only be accounted for by ideas of a continued existence of the dead or of their souls (e.g. closing the eyes and the mouth of the dead, washing the corpse, funerary rituals, funeral, reception etc.). The current interest in the promotion of death-related rituals, the rising anxiety about dying in hospital, and the fears—reputedly irrational—engendered by transplantation medicine show the failure of attempts to radically secularize medicine.

The questions—and instinctive revulsions—that transplantation elicits could stimulate re-thinking of the philosophic assumptions behind the purely anatomic, mechanistic concept of a human being.

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**Note**: Quotations are in German in the original, and are translated by Otmar Binder.

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