

# The Hand: From Symbolism to Surgical Reality

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## Introduction: Bioethics and Christian Morality

**H**UMAN BEINGS have always been fascinated by the world around them and by themselves. At one point in history, the world seemed to be an open book for the scientists. But the last hundred years' amazing leap of science has fundamentally changed the concept of nature and senses. The world has become a book in which one can intervene and even rewrite.<sup>1</sup> This is a giant step forward, but it is only justified if used for the good of man. Otherwise, science without conscience has destructive effects. Or, as Saint Paul said: "All things are lawful for me, but not all things are helpful."<sup>2</sup> Doctor Alexis Carrel (Nobel Prize in Physiology or Medicine in 1912) believes that the focus of scientific development should fall on humans: " 'human science' has become the most necessary of all sciences . . . A real science of man must be developed, because it is more necessary than mechanical, physical and chemical sciences."<sup>3</sup>

The progress of science has led to the development of devices of remarkable finesse and great potential; on the other hand, important progress has been made in pharmacological research. These two aspects of development raised the question of their use in support of human beings, not against their life. When it comes to the physician as a scientist and consumer of medical equipment, medical ethics requires a conduct likely to ensure respect for human dignity and the protection of patients as the most vulnerable of all people. Bioethics is the materialization of multidisciplinary research on the conflicts that arise from scientific and technical development in the domain of life.<sup>4</sup> This multidisciplinary research concerns sociology, psychology, law, and religion, even if bioethics do not start from religious data, relating to life in a non-religious manner. Regarding this last remark, it is considered that the procedure is insufficiently developed, because if the patient is deeply religious, the doctor does not master a register for effective communication with the patient. Or, bioethics can extend its validity by resorting to Christian morality, which "is interested in all the topics that are the subject of bioethics, their

ruling being based on the righteous judgment, divine revelation and the teachings of the Church.”<sup>5</sup> One should also take into consideration the fact that the divine attention is focused on the scientist, the doctor.

In the Book of the Wisdom of Jesus Son of Sirach we read: “Give doctors the honor they deserve, for the Lord gave them their work to do . . . Their skill came from the Most High, and kings reward them for it . . . He gave medical knowledge to human beings, so that we would praise him for the miracles he performs.”<sup>6</sup> “Between Science and Faith,” says Professor N. C. Paulescu, “coexists a relationship of harmony, because both lead to the same eternal truths. Following the same purpose, both coordinate and help each other.”<sup>7</sup>

## The Hand: Symbolism and Reality

**T**HE HAND is the symbol of action, activity, being directly connected to work. Contrary to preconceived ideas, work is not a consequence of sin because it has been clearly stated that “The Lord God took the man and put him in the garden of Eden to work it and keep it.”<sup>8</sup> The man was working in the garden with his hands carefully and he was watching it attentively with his mind. We can say that the hand is the primordial tool to serve the mind. God’s work plan in the act of creation is regarded as a model by man: work for six days and on the seventh day rest. Work has a positive value, as it represents the human form of participation in God’s creative action. In the Bible, the hand carries important symbolism. The hand receives, holds, offers and expresses communion. When we place our hand on someone’s shoulder, for example, we wish to express our attachment to that person, when we shake hands with someone we show association. Applause, the sign of praise and admiration is done with the hands. But how can this thing be achieved by a man without a hand or unable to use his hand? In these cases, the man cannot do any of the above or his hand action is limited. Therefore, among the many miraculous healings that Jesus did, one is to a man with a withered hand.<sup>9</sup> Moreover, the withered hand was the right one.<sup>10</sup> However, the right hand symbolism refers to the idea of force, of power, and dexterity, it also refers to the idea of pleasure<sup>11</sup> and justice<sup>12</sup> and approval.<sup>13</sup> So this man lacked all of these. By healing the sick man with the withered hand, He restores his normality, the disease being a deviation from it. How did Jesus manage to heal him? Jesus asked the patient to reach out to Him. And then He healed the sick with His hands. Theologians say it was the healing flux of His hand that was transferred and healed the sick body. In fact, in early times, the Jews mastered the practice of touching with this healing effect: the sacrificing priest laid his hands upon the head of the animal to be sacrificed, for all sins of the people to be transferred upon the animal and so that the perfection of the animal would be received by the priest.<sup>14</sup> The sign language of the deaf-mutes uses the hand as an organ of speech, and the eyes are the ones to listen. How can communication be achieved if the hand is sick? The blind use the hands instead of their eyes, using their fingers to read. The hands connect their owners to the outside world and even “see” the beauty of a person or a sculpture. How could they do this with sick hands? When

speaking of God's hand we refer to His power and greatness in the act of creation.<sup>15</sup> The hand is the instrument by which ideas materialize. Poets even talk about "the thinking of the hand." As Tudor Arghezi, put it: "My mind thinks, I was telling myself, / but what would the mind do without the thinking of the hand?" Hands joined in the prayer position by the disabled, the sick or the unhappy, are accompanied by words in a song that rises to the sky. The hand is an important symbol in Christian art: the position of the hand is not random; on the contrary, it sends a clear message, replacing verbal expression.<sup>16</sup>

Hands, such as the surgeon's or the artist's, certainly receive His gifts. Professor N. C. Paulescu said that there are forms of energy that cannot be observed directly by us through the senses. But this does not mean that these forms of energy do not exist. "In the name of scientific logic, we cast the materialistic doctrine out of science," said Doctor Paulescu.<sup>17</sup> He used to warn his medical students that the materialistic error is a maleficent doctrine mainly because "denying the final causes, and even the efficient causes, and affirming a priori the identity between gross bodies and creatures, this doctrine narrows the horizon of scientific research, it shuts the researchers' eyes and urges them to laziness."<sup>18</sup> Professor Paulescu represents the scientist's voice. Nichifor Crainic, a Christian writer and philosopher, speaks in the same sense: "God unceasingly creates through his great privileged elite of mankind and testimonies that are in the flesh his divine presence in the world."<sup>19</sup>

## Bioethics in Doctor-Patient Relationship

**M**OVING FROM biblical writings to surgical reality, the loss of a hand can be seen as detrimental to the whole person. In this sense Jean-Claude Larchet says: "If injuring the body means affecting the whole person, then taking care of the body and attempting to cure it translates into taking care of the whole person."<sup>20</sup> Saving a man's hand is paying respect to human dignity, restoring his freedom and autonomy. For "the whole body seems to be the substrate of mental and spiritual energies. The integrity of the body is essential to the manifestations of the consciousness. Man thinks, loves, admires and prays at the same time by the brain and all its organs."<sup>21</sup> The surgeon's intervention for the purpose of saving a hand includes a deep social aspect: a man without a hand is an invalid, and, in many cases, is left by his wife and children. This is why, a higher or lower percentage of these patients have their minds haunted by thoughts of suicide. The surgeon is the only one who can restore normality. Moreover, this is also the purpose of the long and serious training of the physician, who eventually comes to master the science and technology suitable for such an undertaking. On the other hand, society must help the person who has gone through such a trauma to reenter the social and professional life. The medical act of restoring the hand ensures the recovery of autonomy and is indeed most righteous, as "the happiest and most useful people are made of a harmonious series of intellectual, physical and moral activities."<sup>22</sup> In other words: "When free, body movements allow us to take possession of the space and act upon nature, hence to feel our power and freedom and to take advantage of them;

hindered by infirmity and disease, they make us painfully feel our limits and temporary nature.<sup>23</sup> In the case of hand surgery, the need for skin, nerve, or vessel grafts may occur. The removal of the graft should be made from less visible places, so that the image of the person is not affected. This is another form of respect for the patient. Respect and dignity for the human being make up the “matrix principle” of bioethics.<sup>24</sup>

## Hand Surgery

**A**RISTOTLE SAID that “the hand is the instrument of all instruments.”<sup>25</sup> The hand conforms to mathematical rules, as other elements of nature do, and observes what is known as the Fibonacci<sup>26</sup> series. The Fibonacci sequence of numbers is found everywhere in nature: in the placement of petals on flowers, leaves, snail shells, etc. It is reflected in the structure of the human hand so that, assuming one is the nail, the distal phalanx is twice as large, the average is three, the proximal five times so that metacarpal is eight times bigger, following the sequence 1, 2, 3, 5, 8, . . . Researchers have shown that DNA also follows this rule.

Therefore, from the earliest times man was concerned with the pathology of the hand and with finding solutions to treat it. Thus, Hippocrates (460–356) spoke about stabilizing the wrist and the hand and finger fractures. Avicenna (980–1036) described the protection of the fractures of the metacarpals with splints. With the development of anatomical studies, the interest in the study of the hand increased.<sup>27</sup> In the 1760s Camper described the chiasma of the flexor digitorum superficialis tendon. Then followed the studies of palmar aponeurosis and contracture, as well as various techniques for removing it.<sup>28</sup> Marc Iselin (1898–1987) was the first to think of the necessity to create a specialized branch of surgery, which was to be called Hand Surgery.<sup>29</sup> In other words, the hand was always under the scrutiny of anatomists and surgeons because of its very complex structures. In 1945 the American Society for Surgery of the Hand was founded. In 1966 the Swiss Society for Surgery of the Hand was founded that studied the traumas of the hand and their emergency treatment. In 1966 the International Federation of Societies for Surgery of the Hand was created.<sup>30</sup> In 1997, the Foundation Claude Verdana opened the Hand Museum in Lausanne. All these actions show the importance of the hand as an anatomical element used in performing all basic functions that make the difference between man and other creatures. Over time, hand surgery developed, more and more reconstruction techniques being discovered for various structures: bones, tendons, vessels, and nerves. Not only the techniques but also the materials for these reconstructions have been developed. The most important achievement was reached when microsurgery (surgery under an operating microscope) allowed the replantation of the hand (see Fig. 1).

Replantation is the reconstruction of all anatomic elements: bones, tendons, and the restoration under the operating microscope of vessels and nerves (see figs. 2–5).

All anatomical elements are painstakingly rebuilt so that the result is a hand functioning close to normal.

FIG. 1. VASCULAR-NERVOUS CUBITAL BUNDLES (VASCULAR AND NERVOUS MICROANASTOMOSIS)

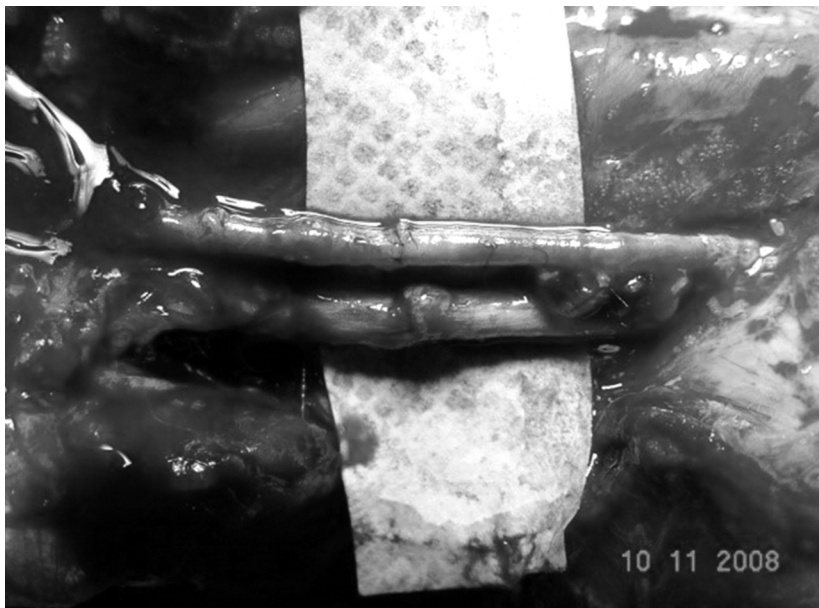


FIG. 2. COMPLETE TRANSCARPAL AMPUTATION (CIRCULAR SAW)



FIG. 3. REPLANTATION—POSTOPERATIVE RESULT



FIG. 4. COMPLETE TRANSCARPAL AMPUTATION



FIG. 5. REPLANTATION—POSTOPERATIVE RESULT



One should not forget the last technical possibility to give back a person his integrity, namely, transplantation. Both graft and transplant are subject to the Civil Code, because the human body is inviolable. Both are made in support of life and human dignity. The law allows the removal of organs for the benefit of another person. This may happen provided it comes as an offer, as proof of generosity and solidarity among people. This act cannot be forced upon an individual or be done under the form of organ sale. If the removal is done from a dead body, it is required to obtain the consent of its owners.

Regarding hand transplantation, it started on 23 September 1998, when Professor J. M. Dubernard performed the first such transplant. The first double hand transplant was achieved in 2001.<sup>31</sup> In 2008, in Munich, the first double arm transplant was done by Professor E. Biemer.<sup>32</sup> In those cases, as well as in those that followed, adapting the patient for the acceptance of the transplanted hands as “his own hands” was quite difficult.

Hand transplantation can be seen as a peculiarity for it is not a life-saving act, like in the case of internal organ transplantation, but it can be seen as the process by which the patient’s life can be improved.

Although at times surgeons may feel their work as being very similar to the one of the Creator, they must not forget that “the fact of mastering something does not mean you are the creator or owner of something. The scientist has shaped some elements of nature, he has learned to use them, but he does not own them because he is not their creator. It would be like claiming that we are watchmakers simply because we use a clock.”<sup>33</sup>

## Conclusions: From Sickness to Healing

**A**T BIRTH, each person receives the Adamic nature of his parents with sinful tendencies, with deviant inclinations. Each of us adds other such inclinations for which we are held responsible. To this incurable state there is no human remedy as yet. Jesus responded, “Reach out your hand!” A healthy person should rejoice, because “man cannot live without joy.” Where there is joy, life triumphs. The one who loses joy is adrift, has no direction, no purpose, being a man without origins.<sup>34</sup> As for the doctors, they must love their patients in order to be able to care for them. Thus, Professor Paulescu taught his students: “When you go into a hospital, strip yourself of your lust for money and pride, drive away your sloth and dedicate yourself completely to the sick, to which you should be thankful because while caring for them you will also be trained.”<sup>35</sup>

All the concepts mentioned above highlight the importance of this anatomic segment of the human body, the hand. Hence all the efforts made by hand surgeons in order to reestablish the integrity of the hand, as well as all the controversies that hand transplant raises. Even though this surgical technique allows us to regain the anatomical integrity of the body, it brings under attention the remaining unsolved issue of identity.<sup>36</sup>

Medically speaking, when a hand surgeon deals with a complex trauma which involves important loss of tissue, he has to do everything possible, using all his knowledge and all his efforts, in order to regain the integrity of this anatomical segment. And yet, despite all this and, also, his surgical talent, a traumatized and healed hand will never be the same as the one which was initially created. It will be useful for patient’s social and professional reintegration, but never the same. Regarding hand transplant, there are some important ethical issues that include all the persons involved in this type of surgical intervention: patient, donor, their families, surgeons, the surgical team, and even society.<sup>37</sup>

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## Notes

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### **Abstract**

#### The Hand: From Symbolism to Surgical Reality

Studied and treated since ancient times, the hand, the tools of tools, differentiates humans from other living things. Symbolically, the hand is directly related to work. Jesus Christ healed with His own hands. The right hand symbolizes dexterity, pleasure, power and approval. The hand gives to an idea physical form in the material world, help artists express themselves and allows doctors to cure their patients. Due to its importance and complexity, a surgical specialty called hand surgery came into being. This branch of plastic surgery has developed a wide variety of reconstruction techniques for complex injuries of the hand and the fingers. Hand surgery also deals with major replantations and, lately, with hand transplant, unilateral or bilateral.

### **Keywords**

hand, symbolism, bioethics, Christian morality, hand surgery