“Medicine for art's sake”? A Philosophical Study on the Relationship between Medicine, Art and Science.

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Abstract
This article is about the relationship of medicine and art, not only through a theoretical approach, but also through the examination of the role of the doctor in an artistic performance. In the first part the definition of medicine as an art is examined, which in literature is based on arguments such as the need for holistic approaches to the patients and for humane doctors. The author attempts to show that such approaches are not related to the nature of art and of the artistic temperament. Medicine is understood as an analytical science with empirical-ontological propositions as its tools. In the second part, the conclusions derived from the theoretical analysis are examined in the case of the cosmetic surgeries "Reincarnation of Saint Orlan", performed by and on the artist Orlan. The main question is whether the surgeons’ direct involvement in this artistic practice distorts the scientific nature of their work.

[Keywords: art, medicine, science, interdisciplinary, philosophical, cosmetic surgery]

It is generally accepted that sciences and arts are mental activities with different purposes and methodologies, but also with frequent interaction between them which, though, does not confuse their discernible roles. However, this is not the case for medicine, which is often defined as an art, despite its scientific character.

This article is opposed to the definition of medicine as an art, which is to be found in a number of writings especially from the field of alternative medicine. Medicine is understood as a science according to the Newtonian model, having many practical applications, like all empirical sciences. Its definition in literature as an art is followed by a series of arguments which the author tries to refute mainly through a clear distinction of what is art and what is science, based on the criteria of modern thought and classification of mental activities. Emphasis is given to the use of empirical-descriptive propositions or of value judgments, as methodological tools in medicine (part I).

In order to make the extracted philosophical conclusions clearer, the relationship between medicine, art and science is approached through a case study on the artistic performance of Orlan with the title "Reincarnation of Saint Orlan", which is a representative example of the direct association between medicine and the visual arts. Orlan used plastic surgery for art’s sake in order to create artistic messages. But even in this unique "commingling" the doctor works within the
framework of scientific limitations and does not make value judgments using social, moral or artistic criteria (parts II & III).

I. Art, science and medicine

The conclusion that medicine is an art, or even that it moves between art and science results either from the area of alternative medicine and is based on the demand for a holistic approach to the patient, or from the field of conventional medicine referring to the bed-side manner and the humanism that every doctor should show to his/her patient. My objection is not against these attitudes, which are more or less desirable, but against the way some researchers understand “art” and “science”. Definitions like “art is concerned chiefly with human interactions, feelings, sensations, ideas, and making meaningful connections laterally and holistically, to generate a particular body of knowledge”, and “science is essentially skeptical, materialistic and atomistic, apprehending our world of experience through a cultural filter and impulse first set rolling by Galileo and which, ever since, has increasingly splintered our world into component parts, their interaction being judged as like a huge machine” are very general and may lead to mistaken conclusions.[1]

The demand for a holistic approach and treatment of the human organism is what mainly distinguishes between alternative and conventional medicine. Medical researchers of the alternative field understand the holistic approach of the world at large as a part of the artistic rather than of the scientific practice.[2] The main argument, however, suggested for defining medicine as an art concerns the relationship between the doctor and the patient, which should have a humane character.[3] Emphasis is often given to the need of doctors for a humanistic education.[4] It should be noted that even in the medical humanities publications, which have rapidly increased since the 1970s, in which medicine is not defined as an art, the need to rectify the doctor-patient relationship, which has suffered from the intrusion of technology in the medical business, is very often underlined.[5]

Whenever medical practice is described as an art, it is usually because of the compassion and understanding that should feature in it.[6] The scientific nature of medicine seems in some cases to be subordinate to the humane art of listening and advocacy. Medicine is perceived more as an art than a science, because of the wider scope of the relationship between the doctor and the patient, which is not consistent with strict scientific limitations: the doctor suggests a treatment both, in terms of patient welfare, which the patient accepts or rejects, and in terms of social justice, as he/she is responsible for the good of society as a whole.[7] Medical practice is linked to moral evaluations, as doctors are required to provide services to all people regardless of social and other criteria.[8]

Next, I will try to give clear definitions of science and art, and according to
them I will try to refute the above arguments which understand medicine as an art
or as a combination of art and science.

From a general aspect, science is to be defined as an intellectual activity
aiming at intersubjective knowledge and at the solution of multiple cognitive
problems through systematic rational and empirical proofs. Sciences are divided
into three categories, according to their methodologies and purposes: first, the
analytical sciences aiming at objective truth and an explanation of the world. They
apply a nomological approach in order to include their results in a framework of
laws and regularities. To the analytical sciences belong the natural (e.g. physics,
chemistry, medicine) and social (e.g. economics, sociology) sciences, which have
an empirical character, and also mathematics and logic, which provide formal
tools; second, the normative sciences which research ways of regulating the
world. They apply a regulative-deontological approach and their methodology is
based on principles that imply criteria of right or wrong. The most significant
normative sciences are jurisprudence and ethics. Third, the humanities which aim
at the interpretation and comprehension of human actions and intellectual works
by drawing their basic methodological tools from the hermeneutical tradition rely
on their central analytic category is "comprehension" that seeks to ascribe
meaning, in a kind of subjective transfer, to the spirit of these actions, or to works
of art. They are value-oriented. To the humanities belong, among others,
philology, art history and theatre studies.

The general methodology of the analytical sciences is empirical,[9] based on
systematic observation and experiment in the search for truth and knowledge, and
is recognized as the most effective way of discovering the natural world and
predicting its behavior. It has its origins in the nomological Newtonian model of
the 17th century which replaced the "argument from authority" and also practices
associated with witchcraft, astrology and superstition.

According to the inductive method, the traditional empirical method of the
analytical sciences, the scientist begins with an observation, continues with more
observations and finally composes a generalization with predictability. The
generalization, if it is a good generalization, will be considered as a law of
nature. Induction, however, presents significant reliability problems, known as the
"induction problem" formulated by David Hume in his book Treatise Concerning
Human Nature. Karl Popper proposed instead the "falsification theory", in which
the scientist starts with a theory that is not the result of observations (which are
based on common sense and are not always reliable), but of his/her creative
imagination. It begins as little more than a guess and an attempt to explain various
aspects of the world by improving the previous theories. Afterwards it will be
subjected to experimental tests with the intention of proving it to be false rather
than true. Whichever theory is proved as a false one will be rejected, or at best, it
will be amended. Science progresses through the procedure of conjectures and
over-turnings.

Unlike the normative sciences and the humanities, analytical sciences are not value oriented. The scientist works without reference to moral and aesthetic values and uses a rigorous and scientific language; his/her sole purpose is to solve the cognitive problem that has been set.

In antiquity there did not exist a clear differentiation between art and science, unlike the modern era, in which these are understood as distinct mental activities. The ancient Greeks used both terms for any activity based on knowledge and followed rules, even if science sometimes was identified more with wisdom (Xenophon, Memorabilia IV.vi.7). According to Aristotle, medicine was as much a productive art because it aimed at the production of health (Metaphysical VII), as a science because it studied health.

In the Middle Ages there was a distinction between liberal and mechanical arts,[10] with medicine recognized as a mechanical art, a perception perpetuated by the 19th century: Medicine had a practical character and the doctor was working without reference to a theoretical and a research background. Between the 1870s and 1910s the development of laboratory research gave medicine a scientific character and has legitimated medical practitioners as scientists.[11] Doctors started to refer to the basic sciences in order to diagnose and recommend treatments. During the first half of the 20th century, however, there was still a negative attitude from some historians of science in accepting medicine as a natural science and in including the research of its history in their scientific field.[12]

The definition of modern medicine as an art is mistaken according to the modern definition of "art", which is used mainly to describe three different and sometimes tangled activities; first, the mental activities that have an aesthetic orientation, derived mainly from artists of traditional beliefs; second, the mental activities aimed at broadening the subjective way of thinking deriving from modern and postmodern artists; third, the manual activities obeying certain practical rules, which have a utilitarian character and derive from trained craftsmen and artists working in the field of the applied arts.

Doctors cannot be either artists or craftsmen, but only scientists. Both, artists and doctors have as a common starting point[13] their creative imagination, which, however, only plays a key role throughout the artistic act. The artist is free and works on the basis of subjective criteria, assigning to his/her creation personal judgments that sometimes may express collective statements. He/she is never required by the nature of his/her occupation to obey specific restrictions, such as the scientist is. The artist works from a position within the world and has unlimited freedom of expression, unlike the scientist who works from an objective outside position, keeping his/her work under constant and strict checks and controls.

Medical activity is shaped by three interrelated stages of work. The first is
research, conducted with experiments and clinical trials. It aims at the expansion of medical knowledge, which is obtained in association with the basic sciences through systematic and empirical tests. Its methodology is based, either on induction, or on falsifiability. The researcher proposes a theory, which ultimately will be either confirmed or refuted. At this stage, medicine is a purely empirical science using ontological-descriptive propositions as its unique methodological tool. Value judgments have no information content and merely reflect the attitude of the person using them: they can lead to a selective conception of the world by criteria that differ from a cognitive approach to it. The choice, however, of issues for scientific research has an axiological derivation (epistemic values),[14] but their scientific solution cannot rely on the value system of the scientist, which would lead to the “moralization” of knowledge and reduce the role and the importance of the empirical sciences. Thus, in the context of medical research choices are part of the scientific process and are related to inter-subjective values, such as public health and the good of humanity. Having always this as his/her objective, the physician-researcher works scientifically and free from social and personal values.[15]

The second level of the medical act concerns the composing of a theoretical framework with basic principles that must be accepted by all doctors. Although important theoretical manuals [16] have been written, Olli S. Miettinen [17] describes a situation according to which doctors usually do not refer to a fixed theoretical framework: "Practice without solid theory actually is the reality even in modern 'scientific' medicine of the Flexner-codified sort. There does not even exist, at present, a codified body of theoretical tenets that ought to be adopted by practicing physicians to guide their productions of gnosis and health ". His critics, however, argue that firm medical principles do exist and are used by doctors, although the diagnosis and the treatment of a disease often depends on multiple, variable and unpredictable factors.[18] The existence of a theoretical framework that is constantly evolving and improving based on experience and research speaks for the definition of medicine as an empirical science, and not an art, as Miettinen argues.[19]

The third stage of the medical act concerns the practical-clinical application of knowledge by the doctor to the patient. The procedure followed by the doctor is based on the scientific method. The patient describes his/her situation, which he/she believes (intuitively and sensationally), is problematic. Then the doctor makes regular checks and examinations to reach a conclusion equating the results of the examinations with currently existing and valid theories. Similarly, he/she proposes a treatment, which the patient either agrees or refuses to follow.

At this third level the question of the "humane" doctor arises, the doctor who must approach the patient with compassion and a sense of justice (he/she should e.g. not do social or racial segregations). The object of the doctor is not the explanation of a natural phenomenon, but the healing of a person taking into
account the dualism of body and mind [20], which presupposes methodological approaches of a humanist nature. This argument is sometimes mistakenly used in order to define the medical practice as an art.[21] The status of the artist does not imply characteristics of good behavior, kindness, affection and understanding. On the contrary, there are cases of artists, who brutally treated other people, animals, and even their own selves, in order to transmit subversive messages and awaken public opinion (e.g. Viennese Activists, Orlan, Abramovich). The artist’s sensitivity has nothing to do with interpersonal relationships, but with his/her ability to understand and sense latent situations, which may later affect the wider community. Therefore, the request for a humanitarian relationship between doctor and patient is perfectly understandable and clearly beneficial for the patient’s mental and physical health, but it should not be associated with art. It can be connected to science, under the conditions that the doctor applies to existing psychiatric and psychological theories and does not work impulsively and intuitively. But even such a humane approach cannot be excluded as it may have a beneficial effect on the patient; it should however not be associated with the scientific status of the physician.[22]

The gap between medical and artistic practice is vast and unbridgeable. Apart from the fact that both, the artist and the doctor, have in a way the ability to improve nature, their scopes and methods are completely different. The artist creates an artwork in order to express subjective beliefs: the ideas emanate from him and his creative imagination. His/her mission is to find an efficient and successful way to express them and maybe pass a message, without being restricted by specific necessities and controls. If he/she succeeds, he/she has created a work with the potential to change the viewers’ way of thinking and perception of reality. On the other hand, the doctor, either working in the field of alternative or conventional medicine, has to solve an external problem, by using specific methods and current scientific theories, in order to choose the correct treatment for his/her patient’s healing. The argument that alternative medicine treats each case as a separate one[23] can only be misleading: different and potentially new combinations of treatments are suggested according to the idiosyncrasy of each patient, but they are based on existing theories and scientific research. Otherwise, the patient would play the role of a guinea pig with a serious risk for his/her health.

II. The role of the surgeon and medicine in the "Reincarnation of Saint Orlan"

From a general point of view, the purpose of medicine is the treatment and cure of patients and therefore the security of public health. Next, I will consider the case of the artist Orlan and her work "The Reincarnation of Saint Orlan"[24], in which the role of the medical procedure seems to differ from the standard. In 1990 Orlan began a series of plastic surgeries on her face, in order to
change it, based on the image she had formed electronically composing elements of the faces of the Mona Lisa (Leonardo), Diana (anonymous sculptor of the School of Fontainebleau), Europa (Gustave Moreau), Venus (Botticelli) and Psyche (Francois Gerard). She chose these persons as inspiring her through the myths and legends attached to them and not as symbols of beauty.[25] The most spotlighted of those surgical performances was “Omnipresence”, held on November 21, 1993 in New York by surgeon Dr. Marjorie Cramer. At the same time Orlan exhibited an installation at the Sandra Gering Gallery in New York, which included a diptych with forty-one photographs of the process of her recovery from surgery, juxtaposed with forty-one computer composites of the desired result, reliquaries with canisters containing her blood and fat, as well as Dr.Cramer’s surgical gown. Orlan uses the potentialities of plastic surgery to give a fluid character to the external body identity equating it with the psychoself, which is always fluid and redefinable. She disrupts the illusion of a solid body which is created through the skin: once the skin is violated, the body discloses its true internal character. She sees the interior of the body as a viscous irrational and unpredictable environment, consisting of complex layers of interwoven muscle, a confusing mass of entrails, acidic fluids, and other perplexing inter-somatic solids and fluids. Orlan’s face becomes a canvas, an imitation of her complex bio-interiority on which she preempts the natural process. In addition, it reflects her internal psychic and mental world that is complex and constantly changing.

Her desire is to defy the taboos that exist about aesthetic surgery on body and face. In 1978 she videotaped a minor operation of hers, and then she incorporated the video in an artwork exhibited at an arts festival, as a "life-art" element. Since then she has perceived the surgical process as a theatrical-religious practice: 'I was fascinated by the operational moment. It has great density; it’s a moment of meditation, light falling as if in a cathedral, with God the father-the surgeon-officiating, attendants surrounding him. It's an instant when life and death are very close'.[26] The "Reincarnation of Saint Orlan" is a hymn to medicine-surgery, and to their potential to change our lives, through the redefinition of our relationship with our bodies.

Orlan’s motives are clearly artistic aiming at the subversion of traditional values by forming new ways of thinking and perceiving reality. More problematic seems to be the definition of the motives of the doctors who worked on this project, as well as whether their participation in an artistic practice affects their scientific work. At a first approach, their intentions do not fit the general definition of medicine.

However, it should be emphasized, that aesthetic surgery is a branch of plastic surgery, which has the peculiarity that it is not always practiced for the reconstruction of burns or other somatic and facial artificial and physical abnormalities. Cosmetic surgery is carried out purely and only for cosmetic change
or improvement of the body and the face. If and when there is no risk for the patient’s health and the doctor believes that the demand for aesthetic change is not a product of psychological and cognitive impairment, he/she proceeds to the surgery. Although this kind of surgery is not designed to cure and preserve public health, the work of the surgeon is entirely scientific: the procedures followed are based on long-term research that has been conducted with rigorous scientific methods.[27]

The same goes for the surgical team which carried out the operations on Orlan’s face. The difference lies in the demand of the "patient", who did not aim at her facial beautification, but at the creation of artistic messages. Through these performances, a new branch of plastic surgery arises, which may be called "artistic surgery" and be defined as the plastic surgery practiced in collaboration with artists as a part of an artistic act: the operation turns into a kind of theatrical performance, through which the artist formulates his/her intentions. "Artistic surgery" cannot exist independently of the artist, who heads the entire operation (in the case of Orlan, artist and patient are the same person) and works in collaboration with the surgeon, who evaluates and realizes the artist’s demands, according to the one and only criterion, that of the assurance of his/her patient’s health (and no other social, moral or artistic considerations).

III. Medicine for art’s sake or medicine for science’s sake?: A small epilogue

Orlan's work is an example of using medicine for art's sake. The medical practice and its result aimed at the satisfaction of artistic demands. As discussed above, the main goal of medicine is to treat the patient and to safeguard public health. This definition is, however, too general and minimizes their value as medical acts, not only Orlan’s, but all cosmetic operations with the purpose of beautifying, as well as those plastic surgeries undergone by witnesses for the prosecution in trials of dangerous persons, or even operations for the sterilization of people who do not want to have children etc. There are therefore a number of cases that are not diseases or disorders, but need medical intervention for social, ethical, survival and even artistic purposes.

These objectives should in no way be related to medical work, which is purely scientific. Its methodological tools are ontological - descriptive propositions and not value judgments that have a meta-theoretical character. During the stage of the application of the theories to the patient, the doctor works according to the scientific model, if the case is a standard one and correlates with the traditional definition of medicine. In all other cases the doctor has to judge the motives of the patient, in order to accept the proposed cooperation. He/she makes two types of evaluation: in order to achieve the first type (judgment of all external motives), he/she does not act as a scientist, but as a thinking and moral person who accepts or rejects the cooperation. During the second type (scientific evaluation) the doctor considers the situation with
scientific-medical criteria and proposes a treatment. In the case of Orlan, the medical team was convinced about the potentiality of her artistic demands and applied their scientific knowledge to achieve them. Medicine was used for art’s sake, but it never ceased to be an analytical science with a theoretical and applied character.

References and Notes

1. Morrell P. Medicine: Art or Science?


4. See, Overby Ph. The Moral Education of Doctors. The New Atlantis Fall 2005;10:17-26, who states that "... a more humanistic education might heal the physicians' deafness"; Hegde BM. Science and the Art of Medicine. JIACM 1999;4:1-3, who argues that the art of clinical medicine is slowly dying, because doctors have lost their sensitivity in their unilateral engagement with technology rather than with art. He mentions the University of Brisbane as the only one in which the students are admitted to the medical school only if they have first been trained in arts and philosophy. However, also in other medical schools humanistic education is provided, see Evans M, Greaves D. Medical Humanities at the University of Swansea. JME: Med Humanities 2001;27,51: 2 / Glasser B. From Kafka to Casualty: Doctors and Medicine in Popular Culture and the Arts-a Special Study Module . JME: Med Humanities 2001, 27,99:101; Meakin R. Medical Humanities in Undergraduate Medical Education - Moving on. Med Humanities 2002;28,1:32. See also, Scott PA, The Relationship between the Arts and Medicine. Med Humanities 2000;26:3-8, who argues that the arts can help doctors to understand humans as unique persons, but also to recognize the inter-subjective elements we all share.


8. This conviction derives from medical ethics that provide a certain context for understanding conflicts in the relationship between doctor and patient. Some of the values that commonly apply to medical ethics discussions are: autonomy, beneficence, non-malefeasance, justice, dignity, truthfulness and honesty. According to my opinion, as I will explain below, the doctor's reference to the above moral values has no subjective character. On the one hand all the above values are inter-subjective and on the other such references are meta-theoretical and derive from the physician as a moral being and not as a scientist.

9. Although firstly it concerned the field of natural sciences, in which it was used as a highly productive schema of problem solving with no substantial ontological connection to the natural world, the empirical method expanded rapidly to the social sciences, which were formed as a metaphor from nature to the social space.

10. For other classification systems of the arts in antiquity, see Tatarkiewics W. Classification of Arts in Antiquity. Journal of the History of Ideas 1963; 24,2:231-240

11. Warner JH.Science in Medicine. Osiris 1985, 2nd Series,1,Historical Writing on American Science: 41


13. Herman J., in: Medicine: the Science and the Art. Med Humanities 2001, 27:42-46, provides as a strong argument for the convergence of art and science the fact that the work of both, scientists and artists, derives from their attempts to understand human nature and the world and that frequently their thoughts converge. This is true, but still art and science are different mental activities with distinct methodological tools and language.

14. Putnam RA. Perceiving Facts and Values. Philosophy 1998; 73. This article as well as her earlier article, Creating Facts and Values. Philosophy 1985;60 examines how the choice of investigations, made by scientists, may be based upon their unexamined subjectivity. See also Smart JC. Ruth Anna Putnam and the Fact-Value Distinction. Philosophy 1999; 74.

15. However, Saunders J. in The Practice of Clinical Medicine as an Art and as a Science. Med Humanities 2000;26:18-22, argues that this may be an ideal situation, as in practice particular cases can not be dictated by evidence from randomized controlled trials or observational methods, thus their conclusions are applied by value judgments.
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16. Some of the older theoretical training manuals are: Osler W. The Principles and Practice of Medicine: Designed for the Use of Practitioners and Students of Medicine (1st published 1892) / Flexner A. Medical Education in the United States and Canada. Bulletin no. 4, New York: Carnegie Foundation for the Advancement of Teaching 1910


22. Many theorists and philosophers of medicine are opponents of such neutral approaches to medicine and proceed to normative analysis, see Goosens WK. Values, Health, and Medicine. Philosophy of Science 1980;47,1:100-115, and for further bibliography. However, such differentiations concern the philosophy of analytical sciences in general and in no case justify the definition of medicine as art. Even if we accept the position of Kuhn that scientists can never separate their subjective perspective from their work, this may work again as an argument for the definition of medicine as a science rather than an art.


27. Childress J and Beauchamp T, in: Principle of Biomedical Ethics. Oxford 1978, identify beneficence as one of the core values of health care ethics. Some scholars, such as Edmund Pellegrino, argue that beneficence is the only fundamental principle of medical ethics. They argue that healing should be the only aim of medicine, and thus activities like cosmetic surgery, contraception and euthanasia cannot be included.
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