

Science and Art

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The literature dealing with the relationship between science and art seems to become more and more popular. The reasons for the increasing interest in this relationship are manifold. It is appreciated by a scientist or people who apply scientific information in their profession and whose ideas are not fulfilled with the scientific thinking only, or by an artist or a consumer of art who does not consider the art or the artistic impression as a pure *l'art pour l'artisme*.

Those interested both in art and science will look for this kind of literature with pleasure and will be grateful to the authors who present to him aspects of the symbiosis of science and art in different cultural horizons.

I was impressed and unconsciously captured by this intriguing problem since my young years but I realized the depth of it after hearing, for the first time, the lecture of dr. Giboda, the organizer of this intellectual meeting. I had admired his approach to the art through his profession of physician, expert on parasites and infectious diseases. When travelling in all the world he saw the beauties of nature in the green wild forests, in parched deserts, muddy and obscure swamps, in oceans and in living dangers by beasts, flora and humans as well. This has led him to realize how near the science and art may be. His ideas appeared then (with cooperation with 8 colleagues) in a beautiful book of essays the Dialogue between science and art published in Rudolfov in 1963.

This Dialog opened my eyes and I saw much more connection between science and art than before. Of course I don't consider myself as an artist even though music, literature and painting has always belonged intimately to my inner life, be it in a primitive way, neither am I a pure scientist as we understand this term now. The theme is for me attractive being a member of various intellectual organizations where this theme often appears and is discussed by both scientist and artists. Listening to the discussions of bright minds give me ideas, without being, however, pure advocate for science or art only. This enables me to have a critical view without prejudice. (*Tacitus: Sine ira et studio*).

The Giboda's Dialog represents a real scientific essay, written by scientists and/or artists in relevant fields. Until I had studied it, my view on the relationship between science and art was quite simple.

It is well known that many scientific workers and intellectuals with scientific background are prone to the art. Some of them are true and even world known poets (Miroslav Holub), other are excellent painters or active musicians. On the other hand artists use science and scientific knowledge (mostly without knowing the mechanisms) and are amazed by it. We know professions where science and art go hand by hand, even without looking artificially for connecting ties. An architect or constructor e.g. represents this symbiosis, using imaginations and mathematics, physic and technology at the same time. Similar to this are many other professions as a craftsman, gardeners, dentist or plastic surgeon among others.

Science and art both belong to individual and national cultural values, i.e. to memes which, similar to environmental and demographic influence, life style, life occasional hazards, natural disasters, religion, politics, tradition and of course genes, have their impact on evolution of species up to human being.

Relations between science and art include also the research concerning the effect of art on man as an individual and nation as a whole. The structural and functional background of these effects is extremely complex. The scientific basis is in its the very beginning and popularization of several fragments may be misleading. However, some experience has been widely discussed. My own experience comes from Japan where I assisted to treatment of some functional health problems by relaxation music (music therapy). Described are also therapeutic methods which included artistic activities produced by patients.

A paradoxical relationship between science, medical practice and art include the scientific aspect of art, for example in cases when a doctor is looking specifically for medical symptoms in paintings (Goiter or other endocrinopathies in icons). Goitrous cretinism can be seen on paintings on the wall of the theatre at Krumlov or at bearded saint woman in the monastery of Loreta in Prague. Unfortunately, such an interest in scientific detail may hinder the artistic impression.

The relationship between science and art can further be observed elsewhere in nature. Many examples are found in the mentioned book presented by Giboda. One will admire the beauties of animals in macro- or micro world, some of them evoking even fearful emotion such as the microscopic portrait of female of a mosquito, a head of wood-worm, a tentacle of cockchafer, an eye of an ant or a colony of microbes.

Together with Giboda we have put the question concerning the difference between minimal general popularity of a scientist and an inadequate high popularity of certain artists (or pseudo-artists) even if higher respect of the entire population is given to the scientists. One of the main reasons is the fact, that we are more able to identify ourselves with an artist and his performance than with a scientist and his research. The scientific work is instructing us while that of an artist is mostly considered as entertainment which we understand more than the scientist's explanations. Of course, even the social standard of a scientist is incomparably lower than that of the artist, whose face is familiar to us through the TV and we get used to him forgiving his sometimes bizarre behaviour. The medias know whom to prefer and who will assure more and expensive advertisements. They are also aware that entertainment which include sex, scandals, catastrophes, individual (criminality) or mass (wars) violence are highly appreciated, as are also sport and aggressive advertisement. However, the existence and development of life is more influenced by science than by art, especially in recent 50 years in which science developed more than in 50 centuries before. On the other hand it is regrettable that our today's life is affected more and more by techniques (automated devices, microwaves and electronics but also by supermarkets, fantastic possibilities of communication, informatics, all-embracing computers and internet, by technical and scientific means in medicine, which are prolonging our life and, to a certain extent even its

quality. Sorry to say that compared to the previous centuries, the real art is nowadays looking for its decent place in a similar way as are other cultural values, ethics moral, personal philosophy (e.g. religion), human contact, human rights, responsibility and liberty in general.

The art may be source of useful information for history. Art as witness serves for past human activities and nature in which the man lived, was born, worked, loved and died. It relates to all continents and historically comprehensible events. The art in this respect is very valuable namely in medicine and concerns diseases, their diagnostics, treatment and prevention in wide historical era, from Egyptian sources intercepted on papyruses two thousand years ago, the cultures of Maya, China, India, Arab and Jewish scripts, up to European middle-aged culture and religious paintings, sculptures. Historical values represent portraits of medical and biological giants as has been Hippocrates, Asclepios, Paracelsus, Vesalius, Harvey, Laeneca, Nightingale, Pasteur, Bernard, Purkyne, Roentgen and others (Vinci's paintings).

There is another art which relates to science. It is the art to interpret science in a way which could be understood to a lay public. It is the art of appropriate pedagogical presentation. Not every scientist is capable of this communication skill. However oversimplification of science or misleading facts and myths cannot be considered as artistic.

To overcome the schism science-art may serve the appropriate education since early infancy. A good school and expert teachers may be of great value for the quality of the pupils. We all remember teachers who were real artists in the science of pedagogic and who gave us the seeds of the perception of art and culture, the love for life and nature. It is and always will be an educated individual and/or nation which will honour art and science and understand that in the globalizing world they will be appreciated by their cultural values more than by strength of their arms.