

Hungarian University of Fine Arts Doctoral School

Natural Sciences and Contemporary Fine Art

Theses for a DLA dissertation

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2008

# Thesis 1

## Fine art and natural science

In this dissertation I have examined the practical connection between natural sciences and fine art under the heading of two main categories. These are as follows: the first includes the projects in the creation of which art uses science for its own purposes. The second category is where science applies art, whether as illustration or documentation. Both instances can be described simply using a hierarchical system of relations like that between a client and a contractor. That is, either fine art is the client, and natural science the contractor, or science is the client and art the contractor.

In this hierarchy the work of the contractor is subordinated to the concept of the party in the position of client. They do not interfere in each other's work. They cannot. At a conceptual level, there is no suggestion of cooperation, as the two things have different methodologies. Both the artist and the researcher use their own methods, irrespective of the goal in question. The project, however, always serves the objectives of the client in the first instance.

In the case of artworks with great technological requirements, the problem of cooperation with scientific specialists is practical in nature. From the artist's point of view, the theoretical, methodological differences primarily present everyday communicational and logistical problems. Sometimes an artist is simply driven to research the special literature on a specific scientific problem in order to be able to communicate with the scientific specialist they are cooperating with.

In the opposite instance, researchers whose work involves the cooperation of artists are forced to look at their own paradigm systems from a slight distance. For within the realms of certain scientific paradigms it is hard to comprehend many questions which an artist, even with a commission from a scientific direction, will instinctively raise. The story told by Mary Miss merely refers to the way in which the artist tries to find a problem that relates to the activity of the commissioning institution but also bears symbolic significance as well as some value that can be grasped in a visual way.

As well as in the everyday cooperation between the two fields, we can also find things in common in the way the two manage to survive financially. The practice of art and of scientific research are both highly dependent on their financial framework, and thus on the system of institutions.

## Thesis 2

### Applying Popper's falsification equations to fine art

In describing his falsification theory, Karl Popper used equations which can be a useful starting point for the description of the viability of all kinds of innovative intellectual activities. The equation, where corroboration  $C$  is given to hypothesis  $h$  on the basis of evidence  $e$ , with  $P$  the probability of the hypothesis being true, is as follows:

$$C(h,e) = 1 - P(h,e)$$

If we try to apply the equation to art, substituting corroboration with the number of fields the creation of the work will have an influence on, and probability with the chances of the work enjoying success in its original form, we can arrive at very interesting results.

For from the above we can conclude that the original concept can only be realized in an unchanged form, that is the chance of realization is 1, if the number of technical fields it touches on is zero, that is, if there is no kind of technical step between the artist's idea and its implementation. Put simply, according to this equation, there is no ideal case in which the artist does not have to confront any kind of constraint. At least there is no constraint until such time as a technology is discovered that might help the thoughts of the artist be projected directly into the viewers' brains, of course in a lossless fashion, without being truncated.

## **Thesis 3**

### **On spaces and sculpture**

I consider all spatial artistic genres to be sculpture. Installations certainly fall into the category of sculpture. The same is true of works whose core is provided by digital technology, because their concrete spatial appearance also has significance.

Even traditional sculpture or sculpture that is not technology-dependent has technical phases which are not implemented by the artist, because these are specialist tasks which require workshops, equipment, specialist knowledge and experience.

According to Bill Klüver, before the appearance of art with a high technology requirement in the 1960s, there was no example of cooperation of fine artists and natural science specialists in which the scientific specialist used the work done in their own field to help the artist produce a spectacle, phenomenon, etc, with an artistic goal. The execution of such artistic projects genuinely represents a living daily intellectual cooperation between artist and science researcher.

Art's problems, problems which appear as artistic problems, can have an influence on the development of technology.

## **Thesis 4**

### **On the system of institutions**

As far as training is concerned, the institutions of scientific higher education have to grapple with the problem of constantly expanding and separating disciplines. Artistic higher education similarly faces the challenge of establishing the educational framework for a set of disciplines expanded by the appearance of media demanding high technology. Indeed, it is vital for a given institution to attain and maintain university status, and in the application of artistic teaching of the training structures that have been established for humanities and science courses. The introduction into this system of projects assuming knowledge of both technological and artistic areas is a hard task because each demand lengthy specialist training in their own right.

Specialized training can be combined with the development of the topoi that science, humanities and art traditionally form of one another. Snow describes this phenomenon as the juxtaposition of two distinct cultures speaking different languages.

The examples in the dissertation give a volatile portrayal of the relations between the two fields, the practical aspect of which is best grasped in terms of their methodological differences and in the case-by-case interdependencies between problems of the moment to be solved.