

Section 3: Philosophy of the social sciences  
**AN OBJECTIVIST THEORY OF THE ARCHITECTURAL CREATION**

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**Abstract**

This paper will discuss the objectivist theory of art, that of Karl Popper, and the architectural creation.

Depending on his own reaction to his production, he will even discard the product completely. The artist, turns to his own reactions, and his own 'good taste', to modify, discard or continue with his creation. This can be seen as the use of the trial and error method. The quality of the object is assured, not by the inspiration of the artist, but by the result of his self-criticism. He conceives ideas and selects from them the one that he thinks is the best, the one most capable of arousing his emotions. In this sense, the object is the responsibility of the emotions of the artist, not the opposite. The architect also acts according to the scientific method: he puts forward hypothesis (architectural ideas), submits these ideas to severe criticism and then identifies the missing points and errors, either correcting them or discarding the whole hypothesis, ending up by changing to another one, which he finds more consistent with his thoughts. A good architect is one who has the ability to choose the alternatives (hypotheses) most suitable.

Architecture is a complex object, which has a symbolic, a technological and a functional dimension. Each architectural idea is a synthesis of these instances and has to be evaluated from each one of these points of view. This evaluation is done with the aid of drawings, while the architect sketches his ideas on paper. He sees what he draws and, as the artist, he does not draw his emotions but he becomes 'emotional' by what he draws. The drawing of the architect is not, therefore, his expression, but the expression of what he is imagining. In addition, he uses his knowledge to imagine. The creative capabilities of the architect are very often confused with the architect's ability to draw, because it is through the drawing that he describes his imagination, his thoughts. However, the thought is not constructed by the drawing, it is constructed by the knowledge, and it is the knowledge that constructs the drawing.

**1. Popper's objectivist theory of music and art.**

According to Popper [1974], the most important function of the emotions of an artist is the fact that he uses it to criticise his ideas and this is an objective attitude. In this way the artist uses himself as the main judge of his work; modifies what he dislikes and improves what he finds good. Like scientists, artists work by trial and error, eliminating errors through self-criticism.

Popper's ideas on art can be found mainly in the following texts:

1. Two Kinds of Music [1974].
2. On So-Called Inductive Procedures, with Notes on Learning, and on the Inductive Style [1983].
3. Creative self-criticism in Science and Art [1994].

In [1974] Popper puts forward what he calls an objectivist theory of music and art. He first discusses the difference between Bach's and Beethoven's relations to their works. He says that Bach approaches music as problem solving while Beethoven is more concerned with depicting his emotions, making music an instrument of self-expression. Although he recognises Beethoven's geniality, he does not think that his way of composing can be adopted by one who wants to become a composer. On the contrary, he states that adopting Beethoven's way of composing was not permissible for others. Moreover, he fears that it would be damaging for music if Beethoven were taken as a model. He says:

*"I felt that there could be no greater danger to music than an attempt to make Beethoven's ways an ideal, or a standard, or a model"*(p.61)

Why does he say that it should be damaging to music to take Beethoven as a model?

This is because it is impossible for oneself to go through the same feelings and emotions experienced by Beethoven. When the artist formulates his artistic ideas (to solve an artistic problem) emotionally instead of rationally, he does not know how he had conducted his mind to reach his goal, once he has guided himself by his emotions only. Therefore, he cannot submit such work to rational criticism. Beethoven's approach to music cannot be rationally explained, so it cannot be rationally understood and critically discussed. Therefore, it is not objective, which does not mean that Beethoven did not use self-criticism to improve his work.

Conversely, Bach's way of composing (as problem solving) can be easily adopted as a model and then followed up. Popper suggests that Bach's attitude towards his music was 'objective' because he established a method of playing the piano in a melodious way, leading to composition. Bach sets up a kind of pattern for composing, so that he could explain how he had managed to get that effect. Then, Bach's students would be able to learn from these examples, that is, they would try to follow their master's way of composing.

One could argue that this is induction, saying that there is no difference between learning from examples and learning by repetition. It could be said that when the student follows up an example he is just repeating something that has already been done. As he is not creating anything new, he will not be able to become a creative artist. However, Popper [1983] argues that when we try to imitate a solution that somebody else has discovered we are not actually learning by imitation. We are rather learning by trial and error, since we imitate a solution and correct the mistakes we made. Instead of ourselves, other people may correct our mistakes, as in the case of children learning by imitating adults and being corrected by them. This is a typical trial and error process, in which we eliminate errors through criticism (self-criticism or other people's criticism). Bach's students could do this, while Beethoven followers could not, since it would be impossible to try to experience the same emotions, which the artist had been through, as we have said early.

For Popper [1983], conceiving of art as self-expression or the expression of artist's emotions is a mistake, because there are many other problems that an artist tries to solve. He mentions the case of architecture:

*"This is obvious in such an art as architecture, where there are always practical and technical problems to be solved."*(p.68)

Since Vitruvius, it has been said that architecture has three dimensions:

- 1- Constructive dimension, which embraces all technical knowledge and skills that man develops in order to create functional places. The questions addressed to this dimension are *"How to do this?"* It is rather obvious that this dimension can be rationally approached and critically discussed and tested. The development of building technology would not have been so great in the XX century without a rational approach.
- 2- Functional dimension, which refers to ordering things in the space for the performance of activities in everyday life. The questions that belong to this dimension are *"How does it work?"* Functional aspects can also be rationally approached and critically discussed.
- 3 - Symbolic dimension or aesthetic dimension - which is related to the universe of human perceptions, emotions and beliefs. The questions that arise in the analysis of this dimension can be summed up in *"What is it for?"* They comprise the general appearance of buildings (shapes, volumes, and colours). In architectural theory, the aesthetic dimension is considered something to which we cannot approach rationally. It consists of the artistic part of the architectural design process. Most architectural critic is dedicated to the aesthetic of the buildings, although their authors claim to be addressing the three dimensions all together. The success of a building, its popularity, is generally due to its appearance, to its aesthetic qualities.

A good building design must contemplate the three dimensions equally. The balanced situation is obviously more suitable for most architectural projects, although there are many cases in which some technical, functional or aesthetic aspects should be over-emphasized or neglected. As we do not know how to approach architectural aesthetics rationally, we tend to develop complicated methodological apparatus to secure an effective design process. These methodologies are focused on questions like *"How does it work?"* and *"How to do it?"* and may lead to the misapprehension of the whole. I argue that the question *"What is it for?"* which unfolds in *"What should it be like?"* and *"How would we like it?"* is more adequate to address architectural aesthetic in an objective way.

My main purpose, in this paper, is to show that we can transpose Popper's ideas to the understanding of the creative performance of architects, as far as the aesthetic dimension of architecture is concerned.

In Popper's view, artists and scientists work in a similar way. He develops his argument as follows ([1983], p. 64):

*"Through work the musician may, like a scientist, learn by trial and error. And with the growth of his work his musical judgement and taste may also grow – and perhaps even his creative imagination. But this growth will*

*depend on effort, industry, dedication to his work; on sensitivity to the work of others, and on self-criticism.”*

I tend to believe that self-criticism alone is not enough. Other person's criticisms can also help artists and architects, as for the artistic dimension of architecture. However, it has to be an objective criticism of the subjective aspects of the work of art. Gombrich [1986], for example, has demonstrated that it is possible to address objective criticisms to the objective aspects of art, but he hardly touched those aspects that provoke emotions, the subjective ones.

It seems to me that Popper give us some clues in this direction when he refers to “*sensitivity to the work of others*”. Here he talks about understanding the work of others rather than following remarkable examples. This means that, in architecture, when I like a building I have to be sensitive to it, i.e., I have to draw my attention to its main aesthetic characteristics (volumes, shapes, proportions, textures, colours, ornaments, etc.), in order to distinguish those, which are responsible for affecting me positively. If I succeed in doing so, then I will be able to develop some rational criticisms towards its “subjective” qualities.

For Popper ([1994], p. 230, one of the main differences between science and art is that in art, (...)“*the most important criticism is the creative self-criticism of the artist; in science however, criticism is not just self-criticism but also co-operative criticism (...)*”.

He is suggesting that there is no co-operative criticism (rational criticism) in art.

I think that there can be co-operative criticism in architecture, concerning its artistic dimension, provided we have some aesthetic parameters to guide our judgement. This is what I will try to show next.

## **2. Co-operative criticism in architecture.**

According to Popper [1983], learning is commonly defined in three different ways: (1) learning by trial and error; (2) learning by repetition; (3) learning by imitation. Although he recognises that all of them play a part in the acquisition of knowledge, only the first is relevant to the growth of knowledge. He says:

*“(...) it alone is ‘learning’ in the sense of acquiring new information: of discovering new facts and new problems, practical as well as theoretical, and new solutions to our problems, old as well as new. This kind of learning includes the discovery of new skills and of new ways of doing things.”* (p. 40)

When we discover a solution to a problem, we may become familiar with it by repeating it. For example, when we are learning to play some musical instrument, or a game, or to sing a song. When we try to imitate a solution that somebody else has discovered (as children learn by imitating adults) we are not learning by imitation. In this case, we are learning by trial and error: we imitate a solution and correct the mistakes we made in our imitation (or other person corrects them). This is a typical trial and error process, in which we eliminate errors through criticism (self-criticism or other person's criticism).

Popper [1994] says that in science there is progress because science has an aim, which is the approximation to the truth (because science is the search of truth). There is no general aim in art, but specific ones, which are pursued for a certain length of time. In this case, we can speak of progress in art. For example, during the time that

the aim of art was the imitation of nature, we can speak of progress in the way of representing light and shade. However, a work of art affects us independently of those aspects subject to progress. Although there is no general progress in art, there is progress (and decline) in the creative power of the individual artist. Popper explains this progress:

When a painter is painting, he is trying to build up his interpretation of an object. He has an idea of what he is trying to represent, but this idea is still vague, because it is inside his mind and has not become a painting yet. He has to bring it to the world, as a picture. Therefore, he has to match what he is doing with what he is thinking of doing. Therefore, while he paints he criticises what he does and corrects his mistakes (he corrects what he thinks that does not match his idea). He uses self-criticism to do that and to improve his work. Popper ([1994], p.230) says:

*“In any case, the correction of errors is like a comparison, a comparison between what has been achieved and what is being aimed at, the ideal picture of the work which is continuously changing under the impact of the work actually done. The work that has been done influences the creative process more and more powerfully.”*

If Popper is right – and I believe he is – a great artist differs from an ordinary one in mainly in two aspects:

- a) The quality of the idea that he can think of.
- b) The aptitude for self-criticism, which unfolds in other two:
  - Ability to grasp what has been wrong, either the representation of the idea or the idea itself.
  - Ability to correct, either the representation of the idea (by finding another way to represent or depict) or the idea itself.

Therefore, if an architect wants to improve his creative power, he has to improve his personal conditions for having good artistic ideas and his ability for self-criticism. Other people’s criticism plays an important role in improving architect’s personal condition for having good aesthetic ideas. However, this is only possible in the case that architectural aesthetics can be rationally explained. If a successful architect says that the beautiful effects he obtained were just expressions of his emotions, he will close the door for other people’s criticism and for the possibility of being example for others architects.

One question remains: Is there such thing as rational explanation of a work of art?

If we can give a satisfactory answer to this question, we can approach the aesthetic dimension of architecture in a rational and critical way. This is what we need to work out. Gombrich [1986] demonstrated how the way of representing shapes, colours, shadows and light has changed in painting. Nevertheless, those are “technical” matters. The architectural parallel would be to study how building technology has changed throughout the time and how these changes have influenced the shapes, volumes and general aspects of buildings. This would be an ‘objective’ history of architecture, if I may say so.

### **3. Improving the quality of the artistic idea.**

When Popper [1974] says that the growth of the creative imagination of the artist also depends “*on sensitivity to the work of others*”, he gives us a clue of how to improve one’s creative imagination and, consequently, the quality of the idea to be generated. To have sensitivity to the work of others, the artist has to be acknowledged with this work. It means that he has to study the history of the art which he is undertaking and the artistic production of others, trying to find out which concepts are underlying their work, which idea is being conveyed, how they managed to reach certain effects, etc. He also has to broaden his knowledge of the cultural environment to which he belongs, including art, science and philosophy. He has to master the techniques applied to his artistic field, so that he can use them to work out his ideas.

#### **4. Improving the aptitude for self-criticism.**

As I have said before, the aptitude for self-criticism can unfold in (1) ability to grasp what has been wrong, either the representation of the idea or the idea itself, and (2) ability to correct, either the representation (by finding another way to represent or depict).

While generating architectural ideas to solve spatial problems, the architect submits them firstly to his own discrimination; selecting the one he thinks is the most suitable. The more accurate his selection process, the better the choice will be. A good architect is one who has the ability to choose the alternatives (hypotheses) most suitable. Obviously, the larger the universe of options, the more likely the chance he will make a good choice. To enlarge this universe of options, the architect will have to join two abilities, the one of imagining in three dimensions, and the one of bringing those imaginations to the real world, through drawings and models. Here is where the computer comes to the scene, as an aid, and stimulatory tool.

The computer can now aid the description of the thought, which could only be made through drawings, and this perhaps is a revolution in the field of design. The efficiency of the computer in the visualisation of images, conceived by the knowledge is incomparably larger than the efficiency of the best drawing technician. However, it is important to emphasize that the computer does not conceive images. It will, with a fantastic velocity and efficiency, bring to the real world the thoughts of the architect, the images of buildings worked in three dimensions: functional, symbolic, and technological. Seeing the future building in such clear way, the architect is able to better analyze how it looks like and how much it matches with his aesthetic intentions. Critics – and other architects – can also access the virtual building and deliver their criticism before the actual construction, before the architectural mistakes have been erected. In this way, the project can be refuted and replaced by other that stands better to criticism.

#### **5. Conclusion.**

Popper’s objectivist theory of art can be applied to the architectural creation, since self-criticism and other person’s criticism play an important role in the architectural creative imagination.

The creative capabilities of the architect are very often confused with the architect’s ability to draw, because it is through the drawing that he describes his imagination, his thoughts. However, the thought is not constructed by the drawing, it is constructed by the knowledge, and it is the knowledge that constructs the drawing.

Computers can aid architects to make realistic models, improving his critical abilities, as far as self-criticism is concerned.

The potential to use the computer within the design process begins with the preliminary information about a project until the communication with the general public through the use of interactive multimedia. The computer with the ability to visualise in three dimensions can increase the efficiency or speed of the design process. Teaching the student to use the computer as a creative instrument is a challenge to architectural courses.

If architects assume that architectural creation is carried out by trial and error - and elimination of errors by criticism - they will develop a more critical attitude towards their projects; they will accept other person's criticism as a contribution for improving their creative imagination, rather than as attacks on their architectural ideas.

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